



FT. PIERCE, FLORIDA 1999 ODMDS BENTHIC COMMUNITY ASSESSMENT



Submitted to

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1.0 INTRODUCTION

The Ft. Pierce, Florida Ocean Dredged Material Disposal Site (ODMDS) was investigated by the U.S. Environmental Protection Agency (EPA) during July, 1999 as part of a monitoring study of dredged material disposal at the site. One aspect of this evaluation was benthic community characterization, which was accomplished via sample collection by EPA personnel and laboratory and data analysis by Barry A. Vittor & Associates, Inc. (BVA).

The Ft. Pierce ODMDS is centered at approximately 27°28'4.04"N and 80°12'1.65"W (Table 1; Figure 1). Three benthic monitoring stations were located within the disposal area and nine stations were located just outside this area (Figure 1).

2.0 METHODS

2.1 Sample Collection And Handling

Divers used a hand-held cylindrical corer (area = 0.0079 m²) to collect bottom samples. Fifteen replicate cores were obtained at each of ten stations and 30 replicates were collected at Stations 6 and 11. Macrofaunal samples were sieved through a 0.5-mm mesh screen and preserved with 10% formalin on ship. Macrofaunal samples were transported to the BVA laboratory in Mobile, Alabama. Hand cores were also collected at each station for sediment texture analysis. These data were analyzed by the EPA and provided to BVA.

The greater number of core samples collected at Stations 6 and 11 were used to verify the number replicates needed to adequately represent the number of unique taxa in the benthic assemblage at the study area (Appendix I). Data were evaluated using species-area curves and the 75% criteria established by Dennison and Hay (1967). Station 6 contained 192 distinct taxa, with 66% appearing in the first 15 replicates. Station 11 contained 233 distinct taxa with 72% appearing within the first 15 replicates. It was anticipated that the number of distinct (non-redundant) taxa were lower than the actual number of taxa, and that 15 replicate samples per station would adequately represent the ODMDS study area.

2.2 Macrofaunal Sample Analysis

In BVA's laboratory, benthic samples were inventoried, rinsed gently through a 0.5-mm mesh sieve to remove preservatives and sediment, stained with Rose Bengal, and stored in 70% isopropanol solution until processing. Sample material (sediment, detritus, organisms) was placed in white enamel trays for sorting under Wild M-5A dissecting microscopes. All macroinvertebrates were carefully removed with forceps and placed in labelled glass vials containing 70% isopropanol. Each vial represented a major taxonomic group (*e.g.* Oligochaeta, Mollusca, Arthropoda). Oligochaetes were individually mounted and cleared on microscope slides prior to identification. All sorted macroinvertebrates were identified to the lowest practical identification level (LPIL), which in most cases was to species level unless the specimen was a juvenile, damaged, or otherwise unidentifiable. The number of individuals of each taxon, excluding fragments, was recorded. A voucher collection was prepared, composed of representative individuals of each species not previously encountered in samples from the Ft. Pierce region.

Each sample was analyzed for wet-weight biomass (g/m²) for the major taxonomic groups identified. After identification, each taxonomic group was kept in separate vials and preserved in 70% isopropyl alcohol. A biomass technician removed the organisms from a vial, placed them on a filter paper pad, gently blotted them with a paper towel to remove moisture, placed them in a tared weighing pan, and weighed the pan to the nearest 0.1 mg using a Mettler Model AG-104 balance.

3.0 DATA ANALYSIS METHODS

3.1 Assemblage Analyses

All data generated as a result of laboratory analysis of macrofauna samples were first coded on data sheets. Enumeration data were entered for each species according to station and replicate. These data were reduced to a data summary report for each station, which included a taxonomic species list and benthic community parameters information. Documentation of BVA's standard QA/QC procedures and results for this project are available upon request.

Several numerical indices were chosen for analysis and interpretation of the macrofaunal data. Selection was based primarily on the ability of the index to provide a meaningful summary of data, as well as the applicability of the index to the characterization of the benthic community. Abundance is reported as the total number of individuals per station and the total number of individuals per square meter (= density). Species richness is reported as the total number of taxa represented in a given station collection.

Taxa diversity, which is often related to the ecological stability and environmental "quality" of the benthos, was estimated by the Shannon-Weaver Index (Pielou, 1966), according to the following formula:

$$H' = - \sum_{i=1}^S p_i (\ln p_i)$$

where, S = is the number of taxa in the sample,
 i = is the i^{th} taxon in the sample, and
 p_i = is the number of individuals of the i^{th} taxon divided by the total number of individuals in the sample.

Taxa diversity within a given community is dependent upon the number of taxa present (taxa richness) and the distribution of all individuals among those taxa (equitability or evenness). In order to quantify and compare the equitability in the fauna to the taxa diversity for a given area, Pielou's Evenness Index J' (Pielou, 1966) was calculated as $J' = H'/\ln S$, where $\ln S = H'_{max}$, or the maximum possible diversity, when all taxa are represented by the same number of individuals; thus, $J' = H' / H'_{max}$.

Macroinvertebrate data were graphically and statistically analyzed to identify any differences in density and number of taxa per replicate between seasons and disposal areas. Data for total density and taxa richness were $\ln(x+1)$ transformed to meet normality assumptions (Shapiro-Wilk W; SAS Institute, 1997). Transformed density and taxa data were analyzed using a one-way ANOVA, while post-hoc comparisons were calculated using a Tukey-Kramer HSD test (SAS Institute, 1997).

3.2 Cluster Analysis

Cluster analysis was performed on the faunal data to examine between-station differences and to compare faunal composition of each station within the study area. Both normal and inverse cluster analyses were used in this study. Normal analysis treats samples as individual observations, each being composed of a number of attributes (*i.e.* the various taxa from a given sample). Normal analysis is instructive in helping to ascertain community structure and to infer specific ecological conditions between sampling stations from the relative distributions of species. Inverse clustering is based on taxa as individuals, each of which is characterized by its relative abundance in the various samples. This type of analysis is commonly used to identify species groupings with particular habitats or environmental conditions.

Cluster analysis of both station collections (normal analysis) and taxa (inverse analysis) was performed using the average linkage method (SAS Institute 1997). In this method, the distance between two clusters is the average distance between pairs of observations, one in each cluster. Taxa used in these analyses were selected according to their percent abundance in the assemblage.

4.0 HABITAT CHARACTERISTICS

Sediment data for the 12 stations are given in Tables 2 and 3 and Figures 2, 3 and 4. The relative proportion of sediment fractions < 2 mm (sand, silt, clay) and > 2 mm (gravel, shell hash) are given in Table 2 and Figure 2. The > 2 mm fraction made up a significant component of the sediment at all stations but Station 1. In the disposal area (Stations 6, 7, 10) the > 2 mm fraction averaged 31% of the total. Outside the disposal area, the > 2 mm fraction ranged from 0.9% at Station 1 to 39.9% at Station 11 (Figure 2). The relative proportion of the sand, silt and clay components in the < 2 mm fraction is given in Table 3 and Figure 3. Silt and clay made up a significant component of the < 2mm fraction only at Stations 2 (16.3%), 3 (7.5%), and 6 (11.4%). The total organic fraction of the sediments at all stations was uniformly low, with no station having a %TOC fraction greater than 1.7% (Table 2, Figure 4).

5.0 BENTHIC COMMUNITY CHARACTERIZATION

5.1 Faunal Composition, Abundance, And Community Structure

A total of 13,391 organisms, representing 489 taxa, were identified from the 12 stations (Table 4). Polychaetes were the most numerous organisms present representing 37.8% of the total assemblage, followed in abundance by malacostracans (29.4%), gastropods (12.9%), and bivalves (10.2%). Polychaetes represented 50.5% of the total number of taxa followed by malacostracans (18.8%), bivalves (6.1%) and gastropods (4.5%) (Table 4). The percent abundance of major taxa at each station is given in Table 5 and Figure 5. These data indicate that the assemblages at the 12 stations were relatively homogeneous at the level of higher taxa (Phyla). The abundance of macroinvertebrate families at the 12 stations is given in Table 6. The polychaete family, Goniadidae, was the only family which made up greater than 10% of the total number of individuals at the 12 stations. Only three other families (Dorvilleidae, Melitidae, Syllidae) represented more than 5% of the assemblage at the 12 stations (Table 6).

The dominant taxon collected from the 12 Ft. Pierce ODMDS stations was the polychaete, *Goniadides caroliniae*, representing 15.9% of the total number of individuals (Table 7). Other dominant taxa collected included the polychaete, *Protodorvillea kefersteini*, the annelid class Oligochaeta (LPIL) and the phylum Rhynchocoela representing 7.0%, 5.4%, and 5.3% of the total assemblage, respectively (Table 7). Sixteen taxa were collected at all 12 stations (Table 7). Those taxa representing more than 10% of the assemblage at each station are given in Table 8.

Station mean density and total mean taxa data and community indices are given in Table 9. Mean densities ranged from 3696.2 organisms·m⁻² at Station 8 to 14820.7 organisms·m⁻² at Station 10 (Table 9; Figures 6 and 7). There were significant differences in densities between stations ($F = 11.05$; $df = 11, 198$; $\text{Prob} > F = < 0.0001$). However, there was no significant difference in densities between stations located within (6, 7, 10) and outside the disposal site ($F = 2.23$; $df = 1, 208$; $\text{Prob} > F = 0.137$).

The mean number of taxa ranged from 18.1 at Station 8 to 46.2 at Station 2 (Table 9; Figures 8 and 9). There were significant differences in mean number of taxa between stations ($F =$

7.69; df = 11, 198; Prob > F = < 0.0001). However, there was no significant difference in taxa richness between stations located within (6, 7, 10) and outside the disposal site (F = 2.47; df = 1, 208; Prob > F = 0.118).

Taxa diversity and evenness are given in Table 9 and Figure 10. Taxa diversity (H') was high at all stations and ranged from 3.60 at Station 2 to 4.39 at Station 10 (Figure 11). Taxa evenness (J) ranged from 0.70 at Stations 2 and 6 to 0.84 at Station 1. In general, all stations were extremely diverse with an equitable distribution of taxa relative to other benthic infaunal assemblages in the region. The community indices showed considerable uniformity between stations. There was no predictable pattern in community indices between stations within and outside the disposal area (Figures 10 and 11).

Macrofaunal wet-weight biomass data are given in Table 10 and Figures 12 (major groups) and 13 (major groups without molluscs). Stations 2 and 7 exhibited the highest overall biomass due to the presence of a high number of molluscs in the samples. Wet-weight biomass determinations including molluscs are misleading due to the inclusion of shell mass in the totals. Figure 13 gives the station biomass summaries without the mollusc biomass data; Station 10 in the disposal area had almost 3-times the biomass of the other stations when removing the mollusc data.

5.2 Cluster Analysis

Normal (stations) and inverse (species) cluster analyses were performed on the Ft. Pierce ODMDS data set (Figures 14 and 15). Abundance data for the 21 most abundant taxa selected were included in a matrix of station and species groups (Table 11).

Cluster analysis of the 12 stations was interpreted at a three-group level (Figure 14, Table 11). Group A included six stations located outside the disposal area and Station 10 inside the site, Group B contained 3 stations located outside the site and Station 7 inside the site , and Group C included only disposal site Station 6 (Figure 14). Stations in Group A generally had lower macroinvertebrate densities and taxa richness than the remaining stations. Stations in Group B generally had high densities of the polychaetes, *Goniadides caroliniae* and *Protodorvillea kefersteini*, oligochaetes, rhychoocoels, and *Sipuncula* (LPIL). Station 6 representing Group C was

dominated by the single polychaete taxon, *G. caroliniae*, and was the only station in the disposal site with a significant silt/clay sediment fraction (Figure 14, Table 11).

Clustering of the 21 taxa at the 12 stations was interpreted at a four-group level (Figure 15, Table 11). Group 1 included the polychaete taxon, *G. caroliniae*, which was the dominant organism at seven stations. Group 2 included four taxa which were found in abundance at Stations 2, 5, 7, and 11 (Station Group B). Group 3 included taxa which were broadly distributed across all stations. Group 4 was represented by the amphipod, *Maera caroliniana*, which was a dominant member of the macroinvertebrate assemblage at several stations in Station Group B (Figure 15, Table 11).

6.0 1992 vs 1999 COMPARISONS

Biological data collected from the disposal site in 1992 can be compared to data collected from the same site and stations in 1999 (BVA, 1993). In 1992, 11,256 individuals representing 417 taxa were collected from 3 disposal site and 8 reference stations. Annelids (polychaetes) dominated the assemblage at each station (Figure 16); however, echinoderms (particularly brittle starfish in the Class Ophiuroidea) made up a significant component of the macroinvertebrate assemblage at each station. In 1999, ophiuroids made up only a small fraction of the assemblage at each station (Figure 5). Ophiuroidea (LPIL) was the dominant taxon in 1992 representing 12.7% of the total number of individuals collected. Other dominant taxa included the polychaete, *Goniadides caroliniae*, the annelid class, Oligochaeta (LPIL), the polychaete family, Serpulidae (LPIL), and the polychaete, *Schistomeringos pectinata* representing 8.7%, 7.9%, 7.4%, and 5.3% of the total assemblage, respectively. In 1999, *G. caroliniae* and Oligochaeta (LPIL) also dominated the assemblages at the disposal site and reference stations (Table 7).

In 1992, there were significant differences in mean densities ($F = 3.090$, $df = 10, 154$; $\text{Prob} > F = 0.001$) and taxa richness ($F = 3.000$; $df = 10, 154$; $\text{Prob} > F = 0.002$) between stations (Figures 17 and 18). However, there was no significant difference in mean densities ($F = 0.139$, $df = 1, 163$; $\text{Prob} > F = 0.710$) and taxa richness ($F = 0.637$; $df = 1, 163$; $\text{Prob} > F = 0.426$) between disposal site and reference stations (Figures 17 and 18).

There was no significant difference in station mean densities between 1992 and 1999 ($F = 1.360$, $df = 1, 373$, $\text{Prob} > F = 0.244$); there was no significant difference in station taxa richness data between 1992 and 1999 ($F = 3.040$; $df = 1, 373$; $\text{Prob} > F = 0.082$). There was also no significant difference in macroinvertebrate densities at disposal site stations (6, 7, and 10) between 1992 and 1999 ($F = 0.501$; $df = 1, 103$; $\text{Prob} > F = 0.481$) (Figure 17). There was no significant difference between taxa richness data at the disposal site stations in 1992 and 1999 ($F = 0.168$; $df = 1, 103$; $\text{Prob} > F = 0.683$) (Figure 18).

7.0 SUMMARY

The results of the benthic survey of the Ft. Pierce, Florida ODMDS are summarized below:

1. The > 2 mm fraction made up a significant component of the sediment at all stations but Station 1. In the disposal area (Stations 6, 7, 10) the > 2 mm fraction averaged 31% of the total. Outside the disposal area, the > 2 mm fraction ranged from 0.9% at Station 1 to 39.9% at Station 11. Silt and clay made up a significant component of the < 2 mm fraction only at Stations 2 (16.3%), 3 (7.5%), and 6 (11.4%). The total organic fraction of the sediments at all stations was uniformly low, with no station having a %TOC fraction greater than 1.7%
2. A total of 13,391 organisms, representing 489 taxa, were identified from the 12 stations. Polychaetes were the most numerous organisms present representing 37.8% of the total assemblage. Polychaetes also represented 50.5% of the total number of taxa. The assemblages at the 12 stations were relatively homogeneous at the level of higher taxa (Phyla). The polychaete family, Goniadidae, was the only family which made up greater than 10% of the total number of individuals at the 12 stations. Only three other families (Dorvilleidae, Melitidae, Syllidae) represented more than 5% of the assemblage at the 12 stations.
3. The dominant taxon collected from the 12 Ft. Pierce ODMDS stations was the polychaete, *Goniadides carolinae*, representing 15.9% of the total number of individuals. Sixteen taxa were collected at all 12 stations.
4. Mean densities ranged from $3696.2 \text{ organisms} \cdot \text{m}^{-2}$ at Station 8 to $14820.7 \text{ organisms} \cdot \text{m}^{-2}$ at Station 10. There were significant differences in densities between stations. However, there was no

significant difference in densities between stations located within (6, 7, 10) and outside the disposal site.

5. The mean number of taxa ranged from 18.1 at Station 8 to 46.2 at Station 2. There were significant differences in mean number of taxa between stations. However, there was no significant difference in taxa richness between stations located within (6, 7, 10) and outside the disposal site.

6. Taxa diversity (H') was high at all stations and ranged from 3.60 at Station 2 to 4.39 at Station 7. Taxa evenness (J) ranged from 0.70 at Stations 2 and 6 to 0.84 at Station 1. In general, all stations were extremely diverse with an equitable distribution of taxa relative to other benthic infaunal assemblages in the region. The community indices showed considerable uniformity between stations. There was no predictable pattern in community indices between stations within and outside the disposal area.

7. Stations 2 and 7 exhibited the highest overall biomass due to the presence of a high number of molluscs in the samples. Without the mollusc biomass data, Station 10 in the disposal area had almost 3-times the biomass of the other stations.

8. Cluster analysis of the 12 stations was interpreted at a three-group level. Group A included 6 stations located outside the disposal area and Station 10 inside the site, Group B contained 3 stations located outside the site and Station 7 inside the site, and Group C included only disposal site Station 6. Stations in Group A generally had lower macroinvertebrate densities and taxa richness than the remaining stations. Stations in Group B generally had higher densities of the polychaetes, *Goniadides caroliniae* and *Protodorvillea kefersteini*, oligochaetes, rhychoocoels, and *Sipuncula* (LPIL). Station 6 representing Group C was dominated by the single polychaete taxon, *G. caroliniae* and was the only station in the disposal site with a significant silt/clay sediment fraction. Clustering of the 21 taxa at the 12 stations was interpreted at a four-group level. Group 1 included the polychaete taxon, *G. caroliniae*, which was the dominant organism at 7 stations. Group 2 included 4 taxa which were found in abundance at Stations 2, 5, 7, and 11 (Station Group B). Group 3 included taxa which were broadly distributed across all stations. Group 4 was represented

by the amphipod, *Maera caroliniana*, which was a dominant member of the macroinvertebrate assemblage at several stations in Station Group B.

9. In 1992, 11,256 individuals representing 417 taxa were collected from 3 disposal site and 8 reference stations. Annelids (polychaetes) dominated the assemblage at each station; however, echinoderms (particularly brittle starfish) made up a significant component of the macroinvertebrate assemblage at each station. In 1999, ophiuroids made up only a small fraction of the assemblage at each station. Ophiuroidea (LPIL) was the dominant taxon in 1992 representing 12.7% of the total number of individuals collected. Other dominant taxa included the polychaete, *Goniadides carolinae*, the annelid class, Oligochaeta (LPIL), the polychaete family, Serpulidae (LPIL), and the polychaete, *Schistomeringos pectinata*. In 1999, *G. carolinae* and Oligochaeta (LPIL) also dominated the assemblages at the disposal site and reference stations

10. In 1992, there were significant differences in mean densities and taxa richness between stations. However, there was no significant difference in mean densities and taxa richness between disposal site and reference stations.

11. There were no significant differences in either station mean densities or taxa richness between 1992 and 1999. There were also no significant differences in either macroinvertebrate density or taxa richness at disposal site stations (6, 7, and 10) between 1992 and 1999.

8.0 LITERATURE CITED

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Table 1. Station locations for the Ft. Pierce, Florida ODMDS stations, July 1999.

Station	Latitude	Longitude
1	27°28.25'	80°12.25'
2	27°28.50'	80°13.10'
3	27°28.50'	80°12.50'
4	27°28.56'	80°12.00'
5	27°28.70'	80°11.00'
6	27°27.80'	80°12.35'
7	27°27.80'	80°11.70'
8	27°27.50'	80°11.00'
9	27°27.45'	80°12.85'
10	27°27.25'	80°12.00'
11	27°26.50'	80°12.00'
12	27°28.25'	80°11.75'

Table 2. Weight percent of Total Organic Carbon (TOC), and weight percent of sediment fractions greater and less than 2 mm for the Ft. Pierce, Florida ODMDS stations, July 1999.

Station	Replicate 1			Replicate 2			Average		
	% TOC	% > 2mm	% < 2mm	% TOC	% > 2mm	% < 2mm	% TOC	% > 2mm	% < 2mm
1	0.78	1.342	98.658	0.74	0.529	99.471	0.7627	0.936	99.065
2	1.37	36.486	63.514	2.08	20.459	79.541	1.7259	28.473	71.527
3	2.11	9.296	90.704	1.17	8.436	91.564	1.6371	8.866	91.134
4	1.23	18.412	81.588	1.45	18.727	81.273	1.3434	18.570	81.430
5	1.37	23.936	76.064	1.36	13.574	86.426	1.3636	18.755	81.245
6	0.73	20.088	79.912	1.09	33.546	66.454	0.9102	26.817	73.183
7	1.57	35.688	64.312	1.36	21.122	78.878	1.4641	28.405	71.595
8	1.55	21.537	78.463	1.54	34.718	65.282	1.5432	28.127	71.873
9	1.19	18.409	81.591	1.38	21.728	78.272	1.2834	20.068	79.932
10	1.23	38.790	61.210	1.27	38.506	61.494	1.2492	38.648	61.352
11	1.56	47.901	52.099	1.49	30.280	69.720	1.5288	39.090	60.910
12	1.35	25.533	74.467	1.38	28.978	71.022	1.3650	27.255	72.745

Table 3. Volume fraction for sediments less than 2 mm for the Ft. Pierce, Florida ODMDS stations, July 1999.

Station	Fraction	Size	Rep. 1 % of Total Sample	Rep. 2 % of Total Sample	Average % of Total Sample
1	CLAY	3.91	0.390	0.410	0.400
1	SILT	63	2.470	2.860	2.665
1	VF SAND	125	11.040	11.330	11.185
1	F SAND	250	36.300	35.900	36.100
1	M SAND	500	31.500	32.000	31.750
1	C SAND	1000	15.200	14.900	15.050
1	VC SAND	2000	3.100	2.600	2.850
2	CLAY	3.91	2.020	1.770	1.895
2	SILT	63	14.780	14.030	14.405
2	VF SAND	125	2.000	2.000	2.000
2	F SAND	250	4.700	4.200	4.450
2	M SAND	500	14.300	14.100	14.200
2	C SAND	1000	28.500	27.500	28.000
2	VC SAND	2000	33.700	36.400	35.050
3	CLAY	3.91	2.040	0.110	1.075
3	SILT	63	12.160	0.690	6.425
3	VF SAND	125	1.900	0.590	1.245
3	F SAND	250	5.800	5.690	5.745
3	M SAND	500	19.100	24.120	21.610
3	C SAND	1000	28.700	36.300	32.500
3	VC SAND	2000	30.300	32.500	31.400
4	CLAY	3.91	0.190	0.130	0.160
4	SILT	63	0.490	0.640	0.565
4	VF SAND	125	0.230	0.330	0.280
4	F SAND	250	2.400	3.030	2.715
4	M SAND	500	21.290	23.270	22.280
4	C SAND	1000	41.200	40.400	40.800
4	VC SAND	2000	34.200	32.200	33.200
5	CLAY	3.91	0.120	0.100	0.108
5	SILT	63	0.320	0.260	0.292
5	VF SAND	125	0.170	0.150	0.160
5	F SAND	250	2.520	2.450	2.485
5	M SAND	500	18.170	17.840	18.005
5	C SAND	1000	38.200	37.900	38.050
5	VC SAND	2000	40.500	41.300	40.900
6	CLAY	3.91	0.130	2.820	1.475
6	SILT	63	0.720	19.180	9.950
6	VF SAND	125	1.920	9.300	5.610
6	F SAND	250	13.830	15.000	14.415
6	M SAND	500	41.400	21.500	31.450
6	C SAND	1000	30.900	19.000	24.950
6	VC SAND	2000	11.100	13.200	12.150
7	CLAY	3.91	0.170	0.160	0.165
7	SILT	63	0.890	0.880	0.885
7	VF SAND	125	1.170	0.590	0.880
7	F SAND	250	8.070	5.380	6.725
7	M SAND	500	28.600	22.990	25.795
7	C SAND	1000	32.200	32.600	32.400
7	VC SAND	2000	28.900	37.400	33.150

Table 3 continued:

Station	Fraction	Size	Rep. 1 % of Total Sample	Rep. 2 % of Total Sample	Average % of Total Sample
8	CLAY	3.91	0.100	0.120	0.108
8	SILT	63	0.550	0.450	0.498
8	VF SAND	125	0.320	0.430	0.375
8	F SAND	250	3.630	4.110	3.870
8	M SAND	500	21.210	20.690	20.950
8	C SAND	1000	38.700	36.500	37.600
8	VC SAND	2000	35.500	37.700	36.600
9	CLAY	3.91	0.130	0.100	0.113
9	SILT	63	0.410	0.230	0.322
9	VF SAND	125	0.330	0.240	0.285
9	F SAND	250	3.910	3.190	3.550
9	M SAND	500	21.120	20.140	20.630
9	C SAND	1000	37.800	41.200	39.500
9	VC SAND	2000	36.300	34.900	35.600
10	CLAY	3.91	0.170	0.090	0.130
10	SILT	63	1.020	0.500	0.760
10	VF SAND	125	0.780	0.580	0.680
10	F SAND	250	4.790	4.320	4.555
10	M SAND	500	22.640	21.110	21.875
10	C SAND	1000	32.800	33.300	33.050
10	VC SAND	2000	37.800	40.100	38.950
11	CLAY	3.91	0.150	0.100	0.125
11	SILT	63	0.420	0.280	0.351
11	VF SAND	125	0.270	0.170	0.220
11	F SAND	250	2.080	1.410	1.745
11	M SAND	500	16.780	13.740	15.260
11	C SAND	1000	40.300	39.900	40.100
11	VC SAND	2000	40.000	44.400	42.200
12	CLAY	3.91	0.220	0.880	0.550
12	SILT	63	0.890	3.090	1.990
12	VF SAND	125	0.330	0.750	0.540
12	F SAND	250	3.520	4.150	3.835
12	M SAND	500	26.040	24.630	25.335
12	C SAND	1000	34.300	33.900	34.100
12	VC SAND	2000	34.700	32.600	33.650

Table 4. Summary of abundance of major taxonomic groups for the Ft. Pierce, Florida ODMDS, July 1999.

TAXA	Total No. Taxa	% Total	Total No. Individuals	% Total
Annelida				
Polychaeta	185	37.8	6,764	50.5
Oligochaeta	1	0.2	719	5.4
Mollusca				
Bivalvia	50	10.2	816	6.1
Gastropoda	63	12.9	602	4.5
Scaphopoda	2	0.4	8	0.1
Polyplacophora	1	0.2	71	0.5
Arthropoda				
Malacostraca	144	29.4	2,512	18.8
Ostracoda	14	2.9	110	0.8
Echinodermata				
Ophiuroidea	4	0.8	205	1.5
Holothuroidea	3	0.6	5	0.0
Echinoidea	5	1.0	14	0.1
Other Taxa	17	3.5	1,565	11.7
TOTALS	489		13,391	

Table 5. Abundance and distribution of major taxonomic groups for the Ft. Pierce, Florida ODMDS stations, July 1999.

Station	Taxa	No. of Taxa	% of Total	No. of Individuals	% of Total
1	Annelida	52	39.1	200	41.3
	Mollusca	29	21.8	106	21.9
	Arthropoda	43	32.3	154	31.8
	Enchinodermata	2	1.5	2	0.4
	Other Taxa	7	5.3	22	4.5
	Total	133		484	
2	Annelida	89	51.7	1062	70.2
	Mollusca	28	16.3	95	6.3
	Arthropoda	44	25.6	168	11.1
	Enchinodermata	2	1.2	35	2.3
	Other Taxa	9	5.2	152	10.1
	Total	172		1512	
3	Annelida	70	42.9	513	63.8
	Mollusca	33	20.2	73	9.1
	Arthropoda	51	31.3	139	17.3
	Enchinodermata	2	1.2	3	0.4
	Other Taxa	7	4.3	76	9.5
	Total	163		804	
4	Annelida	73	49.0	731	61.6
	Mollusca	29	19.5	99	8.3
	Arthropoda	36	24.2	172	14.5
	Enchinodermata	1	0.7	12	1.0
	Other Taxa	9	6.0	172	14.5
	Total	149		1186	
5	Annelida	74	47.1	815	60.8
	Mollusca	36	22.9	148	11.0
	Arthropoda	34	21.7	105	7.8
	Enchinodermata	3	1.9	16	1.2
	Other Taxa	10	6.4	256	19.1
	Total	157		1340	
6	Annelida	74	38.5	873	58.4
	Mollusca	33	17.2	166	11.1
	Arthropoda	70	36.5	369	24.7
	Enchinodermata	4	2.1	11	0.7
	Other Taxa	11	5.7	77	5.1
	Total	192		1496	

Table 5 continued:

Station	Taxa	No. of Taxa	% of Total	No. of Individuals	% of Total
7	Annelida	73	42.9	630	48.2
	Mollusca	40	23.5	137	10.5
	Arthropoda	44	25.9	357	27.3
	Enchinodermata	3	1.8	25	1.9
	Other Taxa	10	5.9	157	12.0
	Total	170		1306	
8	Annelida	55	43.3	252	57.5
	Mollusca	24	18.9	37	8.4
	Arthropoda	38	29.9	97	22.1
	Enchinodermata	1	0.8	7	1.6
	Other Taxa	9	7.1	45	10.3
	Total	127		438	
9	Annelida	51	40.2	262	42.1
	Mollusca	24	18.9	160	25.7
	Arthropoda	43	33.9	131	21.0
	Enchinodermata	3	2.4	5	0.8
	Other Taxa	6	4.7	65	10.4
	Total	127		623	
10	Annelida	86	41.5	718	46.2
	Mollusca	41	19.8	210	13.5
	Arthropoda	67	32.4	415	26.7
	Enchinodermata	4	1.9	57	3.7
	Other Taxa	9	4.3	155	10.0
	Total	207		1555	
11	Annelida	99	42.5	952	51.2
	Mollusca	49	21.0	188	10.1
	Arthropoda	66	28.3	382	20.5
	Enchinodermata	7	3.0	36	1.9
	Other Taxa	12	5.2	301	16.2
	Total	233		1859	
12	Annelida	65	45.8	475	60.3
	Mollusca	24	16.9	78	9.9
	Arthropoda	41	28.9	133	16.9
	Enchinodermata	4	2.8	15	1.9
	Other Taxa	8	5.6	87	11.0
	Total	142		788	

Table 6. Abundance and distribution of macroinvertebrate Families for the Ft. Pierce, Florida ODMDS stations, July 1999.

TAXON NAME	PHYLUM	CLASS	NO. OF INDIVIDUALS	% TOTAL	CUMMULATIVE %	STATION OCCURRENCE	STATION % OCCURRENCE
Other Taxa	-	-	2324	17.35	17.35	12	100
Goniadidae	A	Poly	2152	16.07	33.43	12	100
Dorvilleidae	A	Poly	985	7.36	40.78	12	100
Melitidae	Ar	Mala	803	6.00	46.78	12	100
Syllidae	A	Poly	692	5.17	51.95	12	100
Spionidae	A	Poly	425	3.17	55.12	12	100
Hesionidae	A	Poly	406	3.03	58.15	12	100
Pilargiidae	A	Poly	338	2.52	60.68	12	100
Aoridae	Ar	Mala	292	2.18	62.86	12	100
Bodotriidae	Ar	Mala	243	1.81	64.67	12	100
Crassatellidae	M	Biva	230	1.72	66.39	12	100
Chrysopetalidae	A	Poly	195	1.46	67.84	12	100
Aspidosiphonidae	S	-	181	1.35	69.20	11	92
Tellinidae	M	Biva	170	1.27	70.47	11	92
Limopsidae	M	Biva	164	1.22	71.69	11	92
Caecidae	M	Gast	161	1.20	72.89	12	100
Capitellidae	A	Poly	155	1.16	74.05	12	100
Maldanidae	A	Poly	147	1.10	75.15	10	83
Opheliidae	A	Poly	122	0.91	76.06	12	100
Glyceridae	A	Poly	108	0.81	76.87	12	100
Paraonidae	A	Poly	104	0.78	77.64	12	100
Sigalionidae	A	Poly	103	0.77	78.41	12	100
Paguridae	Ar	Mala	99	0.74	79.15	12	100
Mysidae	Ar	Mala	97	0.72	79.87	6	50
Serpulidae	A	Poly	92	0.69	80.56	10	83
Paratanaidae	Ar	Mala	79	0.59	81.15	11	92
Onuphidae	A	Poly	74	0.55	81.70	12	100
Columbellidae	M	Gast	74	0.55	82.26	12	100
Synopiidae	Ar	Mala	74	0.55	82.81	10	83
Cerithiidae	M	Gast	71	0.53	83.34	12	100
Scaphandridae	M	Gast	70	0.52	83.86	12	100
Phoxocephalidae	Ar	Mala	68	0.51	84.37	7	58
Phylloocidae	A	Poly	60	0.45	84.82	12	100
Liljeborgiidae	Ar	Mala	60	0.45	85.27	3	25
Nereidae	A	Poly	59	0.44	85.71	12	100
Nephtyidae	A	Poly	58	0.43	86.14	12	100
Cirratulidae	A	Poly	56	0.42	86.56	12	100
Calyptaeidae	M	Gast	53	0.40	86.95	11	92
Ampeliscidae	Ar	Mala	53	0.40	87.35	11	92
Neomegamphopidae	Ar	Mala	50	0.37	87.72	10	83
Goneplacidae	Ar	Mala	49	0.37	88.09	10	83
Branchiostomidae	C	Lept	49	0.37	88.45	10	83
Oweniidae	A	Poly	47	0.35	88.81	12	100
Magelonidae	A	Poly	44	0.33	89.13	11	92

Table 6 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cummulative %	Station Occurrence	Station % Occurrence
Isaeidae	Ar	Mala	44	0.33	89.46	10	83
Lucinidae	M	Biva	43	0.32	89.78	3	25
Mesodesmatidae	M	Biva	43	0.32	90.11	11	92
Ampharetidae	A	Poly	42	0.31	90.42	10	83
Philomedidae	Ar	Ostra	42	0.31	90.73	9	75
Pyramidellidae	M	Gast	41	0.31	91.04	6	50
Oedicerotidae	Ar	Mala	38	0.28	91.32	1	8
Diogenidae	Ar	Mala	37	0.28	91.60	3	25
Lumbrineridae	A	Poly	36	0.27	91.87	9	75
Veneridae	M	Biva	36	0.27	92.14	10	83
Polygordiidae	A	Poly	34	0.25	92.39	10	83
Eunicidae	A	Poly	33	0.25	92.64	6	50
Turbinidae	M	Gast	33	0.25	92.88	8	67
Eulimidae	M	Gast	33	0.25	93.13	7	58
Cylindroleberididae	Ar	Ostra	33	0.25	93.38	11	92
Sabellidae	A	Poly	28	0.21	93.59	8	67
Orbiniidae	A	Poly	27	0.20	93.79	9	75
Poecilochaetidae	A	Poly	26	0.19	93.98	11	92
Amphinomidae	A	Poly	25	0.19	94.17	5	42
Tubulanidae	R	Anop	24	0.18	94.35	10	83
Processidae	Ar	Mala	24	0.18	94.53	7	58
Cirolanidae	Ar	Mala	24	0.18	94.71	10	83
Alpheidae	Ar	Mala	22	0.16	94.87	6	50
Corbulidae	M	Biva	21	0.16	95.03	9	75
Mytilidae	M	Biva	21	0.16	95.18	7	58
Semelidae	M	Biva	21	0.16	95.34	10	83
Haustoriidae	Ar	Mala	21	0.16	95.50	6	50
Platyischnopidae	Ar	Mala	21	0.16	95.65	3	25
Rissoidae	M	Gast	20	0.15	95.80	8	67
Terebellidae	A	Poly	19	0.14	95.95	8	67
Hyssuridae	Ar	Mala	19	0.14	96.09	9	75
Bateidae	Ar	Mala	18	0.13	96.22	4	33
Podoceridae	Ar	Mala	18	0.13	96.36	5	42
Arigissidae	Ar	Mala	17	0.13	96.48	7	58
Microparasellidae	Ar	Mala	17	0.13	96.61	7	58
Apseudidae	Ar	Mala	16	0.12	96.73	4	33
Sarsiellidae	Ar	Ostra	16	0.12	96.85	2	17
Saccocirridae	A	Poly	15	0.11	96.96	6	50
Chaetopteridae	A	Poly	15	0.11	97.07	6	50
Palaemonidae	Ar	Mala	15	0.11	97.18	5	42
Sicyoniidae	Ar	Mala	15	0.11	97.30	5	42
Amphiuridae	E	Ophi	14	0.10	97.40	5	42
Melphidippidae	Ar	Mala	13	0.10	97.50	5	42
Diastyliidae	Ar	Mala	13	0.10	97.60	7	58

Table 6 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cummulative %	Station Occurrence	Station % Occurrence
Xanthidae	Ar	Mala	13	0.10	97.69	5	42
Amphilochidae	Ar	Mala	12	0.09	97.78	8	67
Mellitidae	E	Echi	12	0.09	97.87	6	50
Polynoidae	A	Poly	11	0.08	97.95	7	58
Anomiidae	M	Biva	11	0.08	98.04	9	75
Olividae	M	Gast	11	0.08	98.12	5	42
Golfingiidae	S	-	11	0.08	98.20	2	17
Pisionidae	A	Poly	10	0.07	98.27	3	25
Aeginellidae	Ar	Mala	10	0.07	98.35	8	67
Ishyroceridae	Ar	Mala	10	0.07	98.42	5	42
Acrocirridae	A	Poly	9	0.07	98.49	5	42
Nannastacidae	Ar	Mala	9	0.07	98.56	8	67
Serolidae	Ar	Mala	9	0.07	98.63	5	42
Kalliapseudidae	Ar	Mala	9	0.07	98.69	2	17
Oenonidae	A	Poly	8	0.06	98.75	4	33
Pandoridae	M	Biva	8	0.06	98.81	6	50
Pasiphaeidae	Ar	Mala	8	0.06	98.87	6	50
Lineidae	R	Anop	7	0.05	98.92	4	33
Pectinidae	M	Biva	7	0.05	98.98	6	50
Lysianassidae	Ar	Mala	6	0.04	99.02	2	17
Majidae	Ar	Mala	6	0.04	99.07	6	50
Pinnotheridae	Ar	Mala	6	0.04	99.11	4	33
Turridae	M	Gast	5	0.04	99.15	4	33
Dentaliidae	M	Scap	5	0.04	99.19	3	25
Rutidermatidae	Ar	Ostra	5	0.04	99.22	2	17
Ophiuridae	E	Ophi	5	0.04	99.26	3	25
Nuculidae	M	Biva	4	0.03	99.29	3	25
Trochidae	M	Gast	4	0.03	99.32	3	25
Calappidae	Ar	Mala	4	0.03	99.35	4	33
Callianassidae	Ar	Mala	4	0.03	99.38	2	17
Porcellanidae	Ar	Mala	4	0.03	99.41	3	25
Upogebia	Ar	Mala	4	0.03	99.44	4	33
Limidae	M	Biva	3	0.02	99.46	3	25
Carditidae	M	Biva	3	0.02	99.48	3	25
Montacutidae	M	Biva	3	0.02	99.51	3	25
Hamineidae	M	Gast	3	0.02	99.53	3	25
Solenoceridae	Ar	Mala	3	0.02	99.55	2	17
Bardiidae	Ar	Ostra	3	0.02	99.57	3	25
Ostracoda Family S	Ar	Ostra	3	0.02	99.60	3	25
Holothuroidea	E	Holo	3	0.02	99.62	3	25
Acoetidae	A	Poly	2	0.01	99.63	1	8
Cardiidae	M	Biva	2	0.01	99.65	1	8
Aclididae	M	Gast	2	0.01	99.66	2	17
Tornidae	M	Gast	2	0.01	99.68	2	17

Table 6 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cummulative %	Station Occurrence	Station % Occurrence
Vitrinellidae	M	Gast	2	0.01	99.69	2	17
Nassariidae	M	Gast	2	0.01	99.71	2	17
Sipunculidae	S	-	2	0.01	99.72	1	8
Hippolytidae	Ar	Mala	2	0.01	99.74	2	17
Leucosiidae	Ar	Mala	2	0.01	99.75	2	17
Ogyrididae	Ar	Mala	2	0.01	99.77	1	8
Anthuridae	Ar	Mala	2	0.01	99.78	2	17
Squillidae	Ar	Mala	2	0.01	99.80	2	17
Gonodactylidae	Ar	Mala	2	0.01	99.81	2	17
Synaptidae	E	Holo	2	0.01	99.83	1	8
Spirorbidae	A	Poly	1	0.01	99.84	1	8
Sabellariidae	A	Poly	1	0.01	99.84	1	8
Arcidae	M	Biva	1	0.01	99.85	1	8
Thraciidae	M	Biva	1	0.01	99.86	1	8
Chamidae	M	Biva	1	0.01	99.87	1	8
Mactridae	M	Biva	1	0.01	99.87	1	8
Psammobiidae	M	Biva	1	0.01	99.88	1	8
Bullidae	M	Gast	1	0.01	99.89	1	8
Naticidae	M	Gast	1	0.01	99.90	1	8
Buccinidae	M	Gast	1	0.01	99.90	1	8
Cancellariidae	M	Gast	1	0.01	99.91	1	8
Pleurobranchidae	M	Gast	1	0.01	99.92	1	8
Caprellidae	Ar	Mala	1	0.01	99.93	1	8
Stenothoidae	Ar	Mala	1	0.01	99.93	1	8
Dromiidae	Ar	Mala	1	0.01	99.94	1	8
Luciferidae	Ar	Mala	1	0.01	99.95	1	8
Penaeidae	Ar	Mala	1	0.01	99.96	1	8
Portunidae	Ar	Mala	1	0.01	99.96	1	8
Idoteiidae	Ar	Mala	1	0.01	99.97	1	8
Janiridae	Ar	Mala	1	0.01	99.98	1	8
Eurybillidae	Ar	Mala	1	0.01	99.99	1	8
Nototanaidae	Ar	Mala	1	0.01	99.99	1	8
Ophiotrichidae	E	Ophi	1	0.01	100.00	1	8

TAXA KEY

Phylum

Class

A= Annelida

E= Echinodermata

R= Rhynchocoela

Poly= Polychaeta

Ophi= Ophioidea

Anop= Anopla

Ar= Arthropoda

Holo= Holothuroidea

C= Chordata

Ostra= Ostracoda

Echi= Echinoidea

Lept= Leptocardia

Mala= Malacostraca

M= Mollusca

S= Sipuncula

Biva= Bivalvia

Gast= Gastropoda

Table 7. Abundance and distribution of taxa for the Ft. Pierce, Florida ODMDS stations, July 1999.

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cumulative	Station Occurrence	% Station Occurrence
<i>Goniadides carolinae</i>	A	Poly	2129	15.90	15.90	12	100
<i>Protodorvillea kefersteini</i>	A	Poly	937	7.00	22.90	12	100
Oligochaeta (LPIL)	A	Oligo	719	5.37	28.27	12	100
Rhynchocoela (LPIL)	R	-	707	5.28	33.54	12	100
<i>Maera caroliniana</i>	Ar	Mala	636	4.75	38.29	12	100
Sipuncula (LPIL)	S	-	462	3.45	41.74	11	92
<i>Heteropodarke formalis</i>	A	Poly	330	2.46	44.21	12	100
<i>Dentatisyllis carolinae</i>	A	Poly	236	1.76	45.97	10	83
<i>Ancistrosyllis hartmanae</i>	A	Poly	207	1.55	47.52	11	92
<i>Acuminodeutopus naglei</i>	Ar	Mala	202	1.51	49.03	12	100
Ophiuroidea (LPIL)	E	Ophi	185	1.38	50.41	12	100
<i>Bhawania heteroseta</i>	A	Poly	177	1.32	51.73	11	92
<i>Apopriionospio dayi</i>	A	Poly	134	1.00	52.73	3	25
Aspidosiphon albus	S	-	131	0.98	53.71	11	92
<i>Crassinella martinicensis</i>	M	Biva	127	0.95	54.66	12	100
Maldanidae (LPIL)	A	Poly	124	0.93	55.58	10	83
<i>Tellina</i> (LPIL)	M	Biva	123	0.92	56.50	5	42
<i>Limopsis cristata</i>	M	Biva	117	0.87	57.37	9	75
<i>Exogone lourei</i>	A	Poly	105	0.78	58.16	9	75
<i>Crassinella lunulata</i>	M	Biva	100	0.75	58.91	12	100
<i>Caecum johnsoni</i>	M	Gast	97	0.72	59.63	9	75
<i>Cyclaspis pustulata</i>	Ar	Mala	85	0.63	60.26	11	92
<i>Filograna</i> sp. A	A	Poly	80	0.60	60.86	10	83
<i>Leptochebia</i> (LPIL)	Ar	Mala	79	0.59	61.45	11	92
<i>Mediomastus</i> (LPIL)	A	Poly	78	0.58	62.03	10	83
Melitidae (LPIL)	Ar	Mala	74	0.55	62.59	10	83
<i>Cyclaspis unicornis</i>	Ar	Mala	74	0.55	63.14	11	92
<i>Armandia maculata</i>	A	Poly	72	0.54	63.68	11	92
Polyplacophora (LPIL)	M	-	71	0.53	64.21	6	50
<i>Ancistrosyllis jonesi</i>	A	Poly	69	0.52	64.72	9	75
Spionidae (LPIL)	A	Poly	68	0.51	65.23	12	100
<i>Metharpinia floridana</i>	Ar	Mala	68	0.51	65.74	7	58
<i>Prionospio</i> (LPIL)	A	Poly	64	0.48	66.22	11	92
<i>Cyclaspis</i> sp. F	Ar	Mala	63	0.47	66.69	9	75
<i>Finella adamsi</i>	M	Gast	58	0.43	67.12	9	75
<i>Glycera</i> (LPIL)	A	Poly	57	0.43	67.55	11	92
<i>Fimbriosthenelais minor</i>	A	Poly	56	0.42	67.96	5	42
<i>Anachis lafresnayi</i>	M	Gast	55	0.41	68.37	10	83
Cirratulidae (LPIL)	A	Poly	54	0.40	68.78	12	100
<i>Liljeborgia</i> sp. A	Ar	Mala	54	0.40	69.18	8	67
<i>Caecum imbricatum</i>	M	Gast	52	0.39	69.57	12	100
<i>Bowmaniella</i> (LPIL)	Ar	Mala	52	0.39	69.96	12	100
Capitellidae (LPIL)	A	Poly	51	0.38	70.34	8	67
Syllidae (LPIL)	A	Poly	51	0.38	70.72	10	83
<i>Dulichia appendiculata</i>	Ar	Mala	51	0.38	71.10	3	25
Aspidosiphon (LPIL)	S	-	50	0.37	71.47	9	75
<i>Pagurus</i> (LPIL)	Ar	Mala	50	0.37	71.85	7	58
Paguridae (LPIL)	Ar	Mala	49	0.37	72.21	11	92
<i>Branchiostoma</i> (LPIL)	C	Lepto	49	0.37	72.58	10	83
<i>Limopsis</i> (LPIL)	M	Biva	47	0.35	72.93	5	42
<i>Plakosyllis quadrioculata</i>	A	Poly	46	0.34	73.27	6	50
<i>Metatiron tropakis</i>	Ar	Mala	46	0.34	73.62	10	83
<i>Euryplax nitida</i>	Ar	Mala	46	0.34	73.96	9	75
Onuphidae (LPIL)	A	Poly	45	0.34	74.30	10	83
<i>Sigambla bassi</i>	A	Poly	45	0.34	74.63	11	92
<i>Neomegamphopus</i> (LPIL)	Ar	Mala	45	0.34	74.97	10	83

Table 7 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cumulative	Station Occurrence	% Station Occurrence
<i>Prionospio cristata</i>	A	Poly	43	0.32	75.29	11	92
<i>Ervilia concentrica</i>	M	Biva	43	0.32	75.61	11	92
<i>Schistomeringos pectinata</i>	A	Poly	42	0.31	75.92	11	92
<i>Owenia fusiformis</i>	A	Poly	42	0.31	76.24	12	100
<i>Microphthalmus hartmanae</i>	A	Poly	39	0.29	76.53	5	42
<i>Nephtys simoni</i>	A	Poly	38	0.28	76.81	11	92
<i>Americichelidium americanum</i>	Ar	Mala	38	0.28	77.10	11	92
<i>Dipolydora socialis</i>	A	Poly	37	0.28	77.37	10	83
<i>Aoridae (LPIL)</i>	Ar	Mala	37	0.28	77.65	10	83
<i>Calyptraea centralis</i>	M	Gast	36	0.27	77.92	10	83
<i>Actiniaria (LPIL)</i>	Cn	Anth	34	0.25	78.17	10	83
<i>Polygordius (LPIL)</i>	A	Poly	34	0.25	78.43	10	83
<i>Ophelia denticulata</i>	A	Poly	34	0.25	78.68	8	67
<i>Aricidea sp. A</i>	A	Poly	34	0.25	78.93	8	67
<i>Ampelisca agassizi</i>	Ar	Mala	34	0.25	79.19	9	75
<i>Ascidiae (LPIL)</i>	C	Asci	34	0.25	79.44	7	58
<i>Paguristes hummi</i>	Ar	Mala	33	0.25	79.69	2	17
<i>Cirrophorus (LPIL)</i>	A	Poly	32	0.24	79.93	8	67
<i>Amboleberis americana</i>	Ar	Ostra	32	0.24	80.17	11	92
<i>Harbansus paucichelatus</i>	Ar	Ostra	32	0.24	80.40	8	67
<i>Typosyllis amica</i>	A	Poly	31	0.23	80.64	8	67
<i>Phyllodocidae (LPIL)</i>	A	Poly	30	0.22	80.86	9	75
<i>Strombiformis (LPIL)</i>	M	Gast	30	0.22	81.08	7	58
<i>Turbellaria (LPIL)</i>	Pl	-	28	0.21	81.29	8	67
<i>Pionosyllis gesae</i>	A	Poly	27	0.20	81.50	10	83
<i>Glycera americana</i>	A	Poly	26	0.19	81.69	5	42
<i>Sigalionidae (LPIL)</i>	A	Poly	26	0.19	81.88	8	67
<i>Poecilochaetus (LPIL)</i>	A	Poly	26	0.19	82.08	11	92
<i>Arene tricarinata</i>	M	Gast	26	0.19	82.27	6	50
<i>Chone (LPIL)</i>	A	Poly	25	0.19	82.46	8	67
<i>Tubulanus (LPIL)</i>	R	Ano	24	0.18	82.64	10	83
<i>Paramphithome sp. B</i>	A	Poly	24	0.18	82.82	5	42
<i>Glycera sp. E</i>	A	Poly	24	0.18	83.00	7	58
<i>Sphaerosyllis aciculata</i>	A	Poly	24	0.18	83.18	8	67
<i>Photis (LPIL)</i>	Ar	Mala	24	0.18	83.35	8	67
<i>Eurydice convexa</i>	Ar	Mala	24	0.18	83.53	10	83
<i>Mooreonuphis pallidula</i>	A	Poly	23	0.17	83.71	7	58
<i>Nereidae (LPIL)</i>	A	Poly	23	0.17	83.88	12	100
<i>Isolda pulchella</i>	A	Poly	23	0.17	84.05	9	75
<i>Axiothella mucosa</i>	A	Poly	22	0.16	84.21	6	50
<i>Odontosyllis enopla</i>	A	Poly	22	0.16	84.38	6	50
<i>Magelona pettiboneae</i>	A	Poly	22	0.16	84.54	8	67
<i>Acteocina candei</i>	M	Gast	22	0.16	84.71	7	58
<i>Bivalvia (LPIL)</i>	M	Biva	21	0.16	84.86	11	92
<i>Turbanilla sp. AE</i>	M	Gast	21	0.16	85.02	1	8
<i>Eudevenopus honduranus</i>	Ar	Mala	21	0.16	85.18	3	25
<i>Goniadidae (LPIL)</i>	A	Poly	20	0.15	85.33	10	83
<i>Ceratonereis mirabilis</i>	A	Poly	20	0.15	85.48	8	67
<i>Parapionosyllis uebelackeriae</i>	A	Poly	20	0.15	85.62	5	42
<i>Trypanosyllis coeliaca</i>	A	Poly	20	0.15	85.77	3	25
<i>Corbula contracta</i>	M	Biva	20	0.15	85.92	8	67
<i>Mediomastus californiensis</i>	A	Poly	19	0.14	86.07	8	67
<i>Nephtyidae (LPIL)</i>	A	Poly	19	0.14	86.21	9	75
<i>Aonides mayaguezensis</i>	A	Poly	19	0.14	86.35	8	67
<i>Acteocina lepta</i>	M	Gast	19	0.14	86.49	7	58
<i>Pateanotus sp. A</i>	A	Poly	18	0.13	86.63	8	67
<i>Sphaerosyllis piriferopsis</i>	A	Poly	18	0.13	86.76	5	42
<i>Rildardanus laminosa</i>	Ar	Mala	18	0.13	86.89	7	58

Table 7 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cumulative	Station Occurrence	% Station Occurrence
<i>Podocerus kleidus</i>	Ar	Mala	18	0.13	87.03	5	42
<i>Mysidae (LPIL)</i>	Ar	Mala	18	0.13	87.16	7	58
<i>Bowmaniella portoricensis</i>	Ar	Mala	18	0.13	87.30	9	75
<i>Scoloplos rubra</i>	A	Poly	17	0.13	87.42	4	33
<i>Crenella divaricata</i>	M	Biva	17	0.13	87.55	7	58
<i>Acteocina sp. A</i>	M	Gast	17	0.13	87.68	5	42
<i>Echiura (LPIL)</i>	Eu	-	17	0.13	87.81	7	58
<i>Argissa hamatipes</i>	Ar	Mala	17	0.13	87.93	7	58
<i>Batea catharinensis</i>	Ar	Mala	17	0.13	88.06	3	25
<i>Microparasellidae Genus A</i>	Ar	Mala	17	0.13	88.19	7	58
<i>Tellinidae (LPIL)</i>	M	Biva	16	0.12	88.31	7	58
<i>Acanthohaustorius bousfieldi</i>	Ar	Mala	16	0.12	88.43	4	33
<i>Processa hemphilli</i>	Ar	Mala	16	0.12	88.54	5	42
<i>Apseudes propinquus</i>	Ar	Mala	16	0.12	88.66	4	33
<i>Lumbrinerides acuta</i>	A	Poly	15	0.11	88.78	4	33
<i>Heteropodarke lyonsi</i>	A	Poly	15	0.11	88.89	4	33
<i>Hesionura coineauai</i>	A	Poly	15	0.11	89.00	4	33
<i>Tellina alternata</i>	M	Biva	15	0.11	89.11	2	17
<i>Armandia agilis</i>	A	Poly	14	0.10	89.22	5	42
<i>Sphaerosyllis (LPIL)</i>	A	Poly	14	0.10	89.32	6	50
<i>Lucina radians</i>	M	Biva	14	0.10	89.43	1	8
<i>Lembos (LPIL)</i>	Ar	Mala	14	0.10	89.53	5	42
<i>Amphiuridae (LPIL)</i>	E	Ophi	14	0.10	89.63	5	42
<i>Saccocirrus sp. A</i>	A	Poly	13	0.10	89.73	6	50
<i>Spio pectiniferae</i>	A	Poly	13	0.10	89.83	4	33
<i>Spiophanes bombyx</i>	A	Poly	13	0.10	89.93	10	83
<i>Semele nuculoides</i>	M	Biva	13	0.10	90.02	6	50
<i>Cerithiidae (LPIL)</i>	M	Gast	13	0.10	90.12	8	67
<i>Alvania auberiana</i>	M	Gast	13	0.10	90.22	5	42
<i>Turbanilla (LPIL)</i>	M	Gast	13	0.10	90.31	5	42
<i>Photis sp. D</i>	Ar	Mala	13	0.10	90.41	4	33
<i>Protohadzia schoennerae</i>	Ar	Mala	13	0.10	90.51	2	17
<i>Gibberosus myersi</i>	Ar	Mala	13	0.10	90.61	5	42
<i>Kupettonura sp. A</i>	Ar	Mala	13	0.10	90.70	7	58
<i>Eunicidae (LPIL)</i>	A	Poly	12	0.09	90.79	4	33
<i>Aricidea (LPIL)</i>	A	Poly	12	0.09	90.88	6	50
<i>Hesionidae (LPIL)</i>	A	Poly	12	0.09	90.97	6	50
<i>Serpulidae (LPIL)</i>	A	Poly	12	0.09	91.06	3	25
<i>Terebellidae (LPIL)</i>	A	Poly	12	0.09	91.15	6	50
<i>Lucinidae (LPIL)</i>	M	Biva	12	0.09	91.24	3	25
<i>Elasmopus (LPIL)</i>	Ar	Mala	12	0.09	91.33	2	17
<i>Decapoda (LPIL)</i>	Ar	Mala	12	0.09	91.42	5	42
<i>Xanthidae (LPIL)</i>	Ar	Mala	12	0.09	91.51	4	33
<i>Eunice (LPIL)</i>	A	Poly	11	0.08	91.59	3	25
<i>Aricidea taylori</i>	A	Poly	11	0.08	91.67	4	33
<i>Polynoidae (LPIL)</i>	A	Poly	11	0.08	91.76	7	58
<i>Sigalion sp. A</i>	A	Poly	11	0.08	91.84	7	58
<i>Eusyllis lamelligera</i>	A	Poly	11	0.08	91.92	5	42
<i>Lucina (LPIL)</i>	M	Biva	11	0.08	92.00	2	17
<i>Crepidula maculosa</i>	M	Gast	11	0.08	92.08	3	25
<i>Ampelisca (LPIL)</i>	Ar	Mala	11	0.08	92.17	6	50
<i>Microdeutopus myersi</i>	Ar	Mala	11	0.08	92.25	3	25
<i>Cyclaspis (LPIL)</i>	Ar	Mala	11	0.08	92.33	8	67
<i>Palaemonidae (LPIL)</i>	Ar	Mala	11	0.08	92.41	4	33
<i>Pisidiae remota</i>	A	Poly	10	0.07	92.49	3	25
<i>Spiochaetopterus oculatus</i>	A	Poly	10	0.07	92.56	3	25
<i>Magelona sp. B</i>	A	Poly	10	0.07	92.64	6	50
<i>Laonice cirrata</i>	A	Poly	10	0.07	92.71	6	50

Table 7 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cumulative	Station Occurrence	% Station Occurrence
Ampharetidae (LPIL)	A	Poly	10	0.07	92.79	7	58
Gastropoda (LPIL)	M	Gast	10	0.07	92.86	6	50
<i>Metatiron triocellatus</i>	Ar	Mala	10	0.07	92.94	3	25
<i>Macrochaeta</i> sp. A	A	Poly	9	0.07	93.00	5	42
<i>Anomia simplex</i>	M	Biva	9	0.07	93.07	7	58
<i>Alpheus</i> (LPIL)	Ar	Mala	9	0.07	93.14	5	42
<i>Serolis mgrayi</i>	Ar	Mala	9	0.07	93.20	5	42
<i>Eusarsiella texana</i>	Ar	Ostra	9	0.07	93.27	2	17
<i>Eunice</i> sp. C	A	Poly	8	0.06	93.33	1	8
<i>Nereis</i> (LPIL)	A	Poly	8	0.06	93.39	4	33
<i>Fimbriosthenetais</i> (LPIL)	A	Poly	8	0.06	93.45	5	42
<i>Trypanosyllis</i> sp. B	A	Poly	8	0.06	93.51	4	33
<i>Macoma brevifrons</i>	M	Biva	8	0.06	93.57	6	50
Veneridae (LPIL)	M	Biva	8	0.06	93.63	6	50
<i>Chione grus</i>	M	Biva	8	0.06	93.69	4	33
<i>Chione intapurpurea</i>	M	Biva	8	0.06	93.75	5	42
<i>Acteocina</i> (LPIL)	M	Gast	8	0.06	93.81	6	50
Columbellidae (LPIL)	M	Gast	8	0.06	93.87	2	17
<i>Anachus</i> (LPIL)	M	Gast	8	0.06	93.93	3	25
<i>Golfingia</i> (LPIL)	S	-	8	0.06	93.99	1	8
<i>Ampelisca bicarinata</i>	Ar	Mala	8	0.06	94.05	5	42
<i>Garosyrhoe bigarra</i>	Ar	Mala	8	0.06	94.11	4	33
<i>Oxyurostylus</i> sp. J	Ar	Mala	8	0.06	94.17	5	42
<i>Leptocheila papulata</i>	Ar	Mala	8	0.06	94.23	6	50
<i>Sicyonia laevigata</i>	Ar	Mala	8	0.06	94.29	3	25
<i>Kallapseudes</i> sp. C	Ar	Mala	8	0.06	94.35	5	42
Ostracoda (LPIL)	Ar	Ostra	8	0.06	94.41	5	42
Lineidae (LPIL)	R	Ano	7	0.05	94.46	4	33
<i>Lumbrineris latreilli</i>	A	Poly	7	0.05	94.51	5	42
Paraonidae (LPIL)	A	Poly	7	0.05	94.56	5	42
<i>Brania swedmarki</i>	A	Poly	7	0.05	94.62	2	17
<i>Diplosyllis octodentata</i>	A	Poly	7	0.05	94.67	1	8
<i>Magelona</i> sp. I	A	Poly	7	0.05	94.72	6	50
<i>Macoma</i> (LPIL)	M	Biva	7	0.05	94.77	3	25
<i>Deutella incerta</i>	Ar	Mala	7	0.05	94.82	6	50
<i>Maera</i> sp. E	Ar	Mala	7	0.05	94.88	3	25
<i>Cyclaspis varians</i>	Ar	Mala	7	0.05	94.93	5	42
<i>Sicyonia</i> (LPIL)	Ar	Mala	7	0.05	94.98	4	33
Brachiopoda (LPIL)	B	-	7	0.05	95.03	3	25
<i>Enope aberrans</i>	E	Echin	7	0.05	95.09	4	33
<i>Unciola serrata</i>	Ar	Mala	7	0.05	95.14	4	33
<i>Microphthalmus</i> (LPIL)	A	Poly	6	0.04	95.18	2	17
<i>Parapriionospio pinnata</i>	A	Poly	6	0.04	95.23	4	33
<i>Scolelepis squamata</i>	A	Poly	6	0.04	95.27	4	33
<i>Lucina multilineata</i>	M	Biva	6	0.04	95.32	1	8
<i>Chione cancellata</i>	M	Biva	6	0.04	95.36	3	25
Turbinidae Genus A	M	Gast	6	0.04	95.41	5	42
<i>Amphilochus</i> (LPIL)	Ar	Mala	6	0.04	95.45	4	33
<i>Erichthonius brasiliensis</i>	Ar	Mala	6	0.04	95.50	3	25
<i>Campylaspis</i> sp. E	Ar	Mala	6	0.04	95.54	6	50
<i>Horoloanthura irpex</i>	Ar	Mala	6	0.04	95.59	4	33
<i>Eusarsiella disparalis</i>	Ar	Ostra	6	0.04	95.63	2	17
Dorvilleidae (LPIL)	A	Poly	5	0.04	95.67	4	33
<i>Scoletoma verrilli</i>	A	Poly	5	0.04	95.71	2	17
<i>Arabella mutans</i>	A	Poly	5	0.04	95.74	4	33
<i>Galathowenia oculata</i>	A	Poly	5	0.04	95.78	4	33
<i>Phyllodoce arenae</i>	A	Poly	5	0.04	95.82	4	33
<i>Phyllodoce</i> (LPIL)	A	Poly	5	0.04	95.86	5	42

Table 7 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cumulative	Station Occurrence	% Station Occurrence
<i>Sigambra</i> (LPIL)	A	Poly	5	0.04	95.89	4	33
<i>Sphaerosyllis taylori</i>	A	Poly	5	0.04	95.93	3	25
<i>Sphaerosyllis perkinsi</i>	A	Poly	5	0.04	95.97	4	33
<i>Magelona</i> (LPIL)	A	Poly	5	0.04	96.00	4	33
<i>Ampharete</i> (LPIL)	A	Poly	5	0.04	96.04	4	33
<i>Pectinidae</i> (LPIL)	M	Biva	5	0.04	96.08	4	33
<i>Pandora</i> (LPIL)	M	Biva	5	0.04	96.12	4	33
<i>Semelidae</i> (LPIL)	M	Biva	5	0.04	96.15	3	25
<i>Chione</i> (LPIL)	M	Biva	5	0.04	96.19	4	33
<i>Caecum</i> (LPIL)	M	Gast	5	0.04	96.23	4	33
<i>Calyptraeidae</i> (LPIL)	M	Gast	5	0.04	96.27	5	42
<i>Zebina browniana</i>	M	Gast	5	0.04	96.30	2	17
<i>Olivella bullula</i>	M	Gast	5	0.04	96.34	4	33
<i>Dentalium</i> (LPIL)	M	Scaph	5	0.04	96.38	3	25
<i>Gitanopsis</i> (LPIL)	Ar	Mala	5	0.04	96.42	4	33
<i>Acanthohaustorius shoemakeri</i>	Ar	Mala	5	0.04	96.45	3	25
<i>Listriella barnardi</i>	Ar	Mala	5	0.04	96.49	4	33
<i>Metatiron</i> (LPIL)	Ar	Mala	5	0.04	96.53	5	42
<i>Alpheidae</i> (LPIL)	Ar	Mala	5	0.04	96.56	1	8
<i>Processa bermudensis</i>	Ar	Mala	5	0.04	96.60	3	25
<i>Ophiolepis</i> (LPIL)	E	Ophi	5	0.04	96.64	3	25
<i>Lumbrineris</i> sp. D	A	Poly	4	0.03	96.67	1	8
<i>Orbiniidae</i> (LPIL)	A	Poly	4	0.03	96.70	3	25
<i>Cirrophorus brevicirratus</i>	A	Poly	4	0.03	96.73	2	17
<i>Podarke obscura</i>	A	Poly	4	0.03	96.76	3	25
<i>Nereis pelagica</i>	A	Poly	4	0.03	96.79	2	17
<i>Ancistrosyllis</i> (LPIL)	A	Poly	4	0.03	96.82	2	17
<i>Litocorsa antennata</i>	A	Poly	4	0.03	96.85	3	25
<i>Syllis hyalina</i>	A	Poly	4	0.03	96.88	1	8
<i>Typosyllis</i> sp. B	A	Poly	4	0.03	96.91	2	17
<i>Apoprionospio</i> (LPIL)	A	Poly	4	0.03	96.94	1	8
<i>Microspio pigmentata</i>	A	Poly	4	0.03	96.97	3	25
<i>Ampharete</i> sp. A	A	Poly	4	0.03	97.00	2	17
<i>Loimia medusa</i>	A	Poly	4	0.03	97.03	3	25
<i>Musculus lateralis</i>	M	Biva	4	0.03	97.06	1	8
<i>Nucula aegeanis</i>	M	Biva	4	0.03	97.09	3	25
<i>Caecum pulchellum</i>	M	Gast	4	0.03	97.12	2	17
<i>Photis pugnator</i>	Ar	Mala	4	0.03	97.15	2	17
<i>Cerapus</i> (LPIL)	Ar	Mala	4	0.03	97.18	2	17
<i>Shoemakerella cubensis</i>	Ar	Mala	4	0.03	97.21	2	17
<i>Neomegamphopus kalanii</i>	Ar	Mala	4	0.03	97.24	3	25
<i>Oxyurostylis</i> (LPIL)	Ar	Mala	4	0.03	97.27	3	25
<i>Calappa sulcata</i>	Ar	Mala	4	0.03	97.30	4	33
<i>Callianassidae</i> (LPIL)	Ar	Mala	4	0.03	97.33	2	17
<i>Euceramus praelongus</i>	Ar	Mala	4	0.03	97.36	3	25
<i>Upogebia</i> (LPIL)	Ar	Mala	4	0.03	97.39	4	33
<i>Mysidopsis furca</i>	Ar	Mala	4	0.03	97.42	3	25
<i>Anchialina typica</i>	Ar	Mala	4	0.03	97.45	3	25
<i>Pseudophilomedes ambon</i>	Ar	Ostra	4	0.03	97.48	1	8
<i>Rutiderma darbyi</i>	Ar	Ostra	4	0.03	97.51	1	8
<i>Mastobranchus variabilis</i>	A	Poly	3	0.02	97.53	1	8
<i>Lumbrineridae</i> (LPIL)	A	Poly	3	0.02	97.55	3	25
<i>Dritonereis</i> sp. E	A	Poly	3	0.02	97.57	2	17
<i>Scoloplos</i> (LPIL)	A	Poly	3	0.02	97.60	3	25
<i>Leitoscoloplos</i> (LPIL)	A	Poly	3	0.02	97.62	3	25
<i>Goniada littorea</i>	A	Poly	3	0.02	97.64	3	25
<i>Syllis gracilis</i>	A	Poly	3	0.02	97.66	3	25
<i>Exogone dispar</i>	A	Poly	3	0.02	97.69	2	17

Table 7 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cumulative	Station Occurrence	% Station Occurrence
Sabellidae (LPIL)	A	Poly	3	0.02	97.71	2	17
Chaopteridae (LPIL)	A	Poly	3	0.02	97.73	2	17
<i>Pandora arenosa</i>	M	Biva	3	0.02	97.75	3	25
<i>Pteromeris perplana</i>	M	Biva	3	0.02	97.77	3	25
<i>Crassinetta</i> (LPIL)	M	Biva	3	0.02	97.80	2	17
<i>Cumingia tellinoides</i>	M	Biva	3	0.02	97.82	3	25
Trochidae (LPIL)	M	Gast	3	0.02	97.84	3	25
Scaphandridae (LPIL)	M	Gast	3	0.02	97.86	3	25
<i>Mitrella lunata</i>	M	Gast	3	0.02	97.89	2	17
<i>Odostomia</i> (LPIL)	M	Gast	3	0.02	97.91	3	25
Scaphopoda (LPIL)	M	Scaph	3	0.02	97.93	2	17
Golfingiidae (LPIL)	S	-	3	0.02	97.95	1	8
Aeginellidae (LPIL)	Ar	Mala	3	0.02	97.98	3	25
<i>Phots</i> sp. J	Ar	Mala	3	0.02	98.00	1	8
<i>Eriopispa</i> (LPIL)	Ar	Mala	3	0.02	98.02	2	17
Synopiidae (LPIL)	Ar	Mala	3	0.02	98.04	3	25
Bodotriidae (LPIL)	Ar	Mala	3	0.02	98.07	2	17
<i>Cumella</i> (LPIL)	Ar	Mala	3	0.02	98.09	3	25
Diogenidae (LPIL)	Ar	Mala	3	0.02	98.11	1	8
Goneplacidae (LPIL)	Ar	Mala	3	0.02	98.13	2	17
Majidae (LPIL)	Ar	Mala	3	0.02	98.16	3	25
<i>Podocheta</i> (LPIL)	Ar	Mala	3	0.02	98.18	3	25
<i>Pseudophilomedes ferulanus</i>	Ar	Ostra	3	0.02	98.20	1	8
<i>Pseudophilomedes</i> (LPIL)	Ar	Ostra	3	0.02	98.22	1	8
<i>Paranesidea</i> sp. A	Ar	Ostra	3	0.02	98.25	3	25
<i>Ostracoda</i> Family S	Ar	Ostra	3	0.02	98.27	3	25
Holothuroidea (LPIL)	E	Holo	3	0.02	98.29	3	25
<i>Saccocirrus</i> (LPIL)	A	Poly	2	0.01	98.30	1	8
<i>Notomastus</i> (LPIL)	A	Poly	2	0.01	98.32	2	17
<i>Nematonereis hebes</i>	A	Poly	2	0.01	98.33	1	8
<i>Lumbrineris</i> (LPIL)	A	Poly	2	0.01	98.35	2	17
<i>Diopatra cuprea</i>	A	Poly	2	0.01	98.36	2	17
<i>Onuphis eremita oculata</i>	A	Poly	2	0.01	98.38	2	17
<i>Cirrophorus branchiatus</i>	A	Poly	2	0.01	98.39	1	8
<i>Cirrophorus perkinsi</i>	A	Poly	2	0.01	98.41	2	17
<i>Polyodontes lupinus</i>	A	Poly	2	0.01	98.42	1	8
<i>Nereis lamellosa</i>	A	Poly	2	0.01	98.44	2	17
<i>Nereis grayi</i>	A	Poly	2	0.01	98.45	2	17
<i>Eumida sanguinea</i>	A	Poly	2	0.01	98.47	2	17
<i>Ancistrosyllis carolinensis</i>	A	Poly	2	0.01	98.48	2	17
<i>Synelmis ewingi</i>	A	Poly	2	0.01	98.50	1	8
<i>Syllides bansei</i>	A	Poly	2	0.01	98.51	2	17
<i>Streptosyllis pettiboneae</i>	A	Poly	2	0.01	98.53	2	17
<i>Syllis cornuta</i>	A	Poly	2	0.01	98.54	2	17
<i>Syllis</i> (LPIL)	A	Poly	2	0.01	98.56	2	17
<i>Exogone</i> (LPIL)	A	Poly	2	0.01	98.57	2	17
<i>Opisthodonta</i> sp. B	A	Poly	2	0.01	98.59	2	17
<i>Mesochaetopterus</i> (LPIL)	A	Poly	2	0.01	98.60	2	17
<i>Polycirrus</i> (LPIL)	A	Poly	2	0.01	98.62	2	17
Anomiidae (LPIL)	M	Biva	2	0.01	98.63	2	17
<i>Nemocardium peramabile</i>	M	Biva	2	0.01	98.65	1	8
Montacutidae (LPIL)	M	Biva	2	0.01	98.66	2	17
<i>Haminoea</i> (LPIL)	M	Gast	2	0.01	98.68	2	17
<i>Caecum floridanum</i>	M	Gast	2	0.01	98.69	1	8
Rissoidae (LPIL)	M	Gast	2	0.01	98.71	2	17
Vitrinellidae (LPIL)	M	Gast	2	0.01	98.72	2	17
<i>Nassarius albus</i>	M	Gast	2	0.01	98.74	2	17
Olividae (LPIL)	M	Gast	2	0.01	98.75	1	8

Table 7 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cumulative	Station Occurrence	% Station Occurrence
<i>Oliva sayana</i>	M	Gast	2	0.01	98.77	2	17
Turridae (LPIL)	M	Gast	2	0.01	98.78	2	17
<i>Turbanilla</i> sp. AB	M	Gast	2	0.01	98.80	1	8
<i>Sipunculus nudus</i>	S	-	2	0.01	98.81	1	8
Amphipoda (LPIL)	Ar	Mala	2	0.01	98.83	2	17
<i>Unciola</i> (LPIL)	Ar	Mala	2	0.01	98.84	2	17
<i>Hippomedon</i> sp. A	Ar	Mala	2	0.01	98.86	1	8
<i>Netamelita barnardi</i>	Ar	Mala	2	0.01	98.87	1	8
Maera (LPIL)	Ar	Mala	2	0.01	98.89	2	17
<i>Eriopispa</i> sp. E	Ar	Mala	2	0.01	98.90	2	17
<i>Tiron</i> (LPIL)	Ar	Mala	2	0.01	98.92	2	17
<i>Alpheus normanni</i>	Ar	Mala	2	0.01	98.93	1	8
<i>Alpheopsis trispinosus</i>	Ar	Mala	2	0.01	98.95	1	8
<i>Ogyrides alphaerostris</i>	Ar	Mala	2	0.01	98.96	1	8
<i>Periclimenes americanus</i>	Ar	Mala	2	0.01	98.98	2	17
<i>Periclimenes</i> (LPIL)	Ar	Mala	2	0.01	98.99	2	17
Pinnotheridae (LPIL)	Ar	Mala	2	0.01	99.01	2	17
<i>Pinnixa</i> (LPIL)	Ar	Mala	2	0.01	99.02	1	8
<i>Processa</i> (LPIL)	Ar	Mala	2	0.01	99.04	2	17
<i>Solenocera</i> (LPIL)	Ar	Mala	2	0.01	99.05	1	8
<i>Amakusanthura magnifica</i>	Ar	Mala	2	0.01	99.07	2	17
Echinoidea (LPIL)	E	Echin	2	0.01	99.08	2	17
<i>Encope</i> (LPIL)	E	Echin	2	0.01	99.10	2	17
<i>Leodia sexiesperforata</i>	E	Echin	2	0.01	99.11	1	8
Porifera (LPIL)	Po	-	1	0.01	99.12	1	8
Hydrozoa (LPIL)	Cn	-	1	0.01	99.13	1	8
<i>Chloeia viridis</i>	A	Poly	1	0.01	99.13	1	8
<i>Dasybranchus lumbricoides</i>	A	Poly	1	0.01	99.14	1	8
<i>Notomastus americanus</i>	A	Poly	1	0.01	99.15	1	8
<i>Sabaco americanus</i>	A	Poly	1	0.01	99.16	1	8
<i>Pettiboneia duofurca</i>	A	Poly	1	0.01	99.16	1	8
<i>Mooreonuphis</i> (LPIL)	A	Poly	1	0.01	99.17	1	8
<i>Kinbergonuphis</i> (LPIL)	A	Poly	1	0.01	99.18	1	8
Opheliidae (LPIL)	A	Poly	1	0.01	99.19	1	8
<i>Armandia</i> (LPIL)	A	Poly	1	0.01	99.19	1	8
<i>Glycera</i> sp. F	A	Poly	1	0.01	99.20	1	8
<i>Nephtys squamosa</i>	A	Poly	1	0.01	99.21	1	8
<i>Paranaitis speciosa</i>	A	Poly	1	0.01	99.22	1	8
<i>Phyllodoce longipes</i>	A	Poly	1	0.01	99.22	1	8
<i>Nereiphylla fragilis</i>	A	Poly	1	0.01	99.23	1	8
<i>Sigalion</i> sp. B	A	Poly	1	0.01	99.24	1	8
<i>Sigalion</i> (LPIL)	A	Poly	1	0.01	99.25	1	8
<i>Parapionosyllis longicirrata</i>	A	Poly	1	0.01	99.25	1	8
<i>Parapionosyllis</i> (LPIL)	A	Poly	1	0.01	99.26	1	8
<i>Autolytus</i> (LPIL)	A	Poly	1	0.01	99.27	1	8
<i>Syllis</i> sp. A	A	Poly	1	0.01	99.28	1	8
<i>Typosyllis</i> (LPIL)	A	Poly	1	0.01	99.28	1	8
<i>Ehlersia cornuta</i>	A	Poly	1	0.01	99.29	1	8
<i>Pionosyllis</i> sp. M	A	Poly	1	0.01	99.30	1	8
<i>Trypanosyllis inglei</i>	A	Poly	1	0.01	99.31	1	8
<i>Trypanosyllis</i> (LPIL)	A	Poly	1	0.01	99.31	1	8
Spirorbidae (LPIL)	A	Poly	1	0.01	99.32	1	8
<i>Dodecaceria</i> sp. A	A	Poly	1	0.01	99.33	1	8
<i>Monticellina dorsobranchialis</i>	A	Poly	1	0.01	99.34	1	8
<i>Polydora</i> (LPIL)	A	Poly	1	0.01	99.34	1	8
<i>Dispio uncinata</i>	A	Poly	1	0.01	99.35	1	8
<i>Carazzziella hobsonae</i>	A	Poly	1	0.01	99.36	1	8
<i>Dipolydora</i> (LPIL)	A	Poly	1	0.01	99.37	1	8

Table 7 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cumulative	Station Occurrence	% Station Occurrence
<i>Sabellaria</i> sp. A	A	Poly	1	0.01	99.37	1	8
<i>Pista palmata</i>	A	Poly	1	0.01	99.38	1	8
<i>Anadara transversa</i>	M	Biva	1	0.01	99.39	1	8
Limidae (LPIL)	M	Biva	1	0.01	99.40	1	8
<i>Lima pellucida</i>	M	Biva	1	0.01	99.40	1	8
<i>Lima</i> (LPIL)	M	Biva	1	0.01	99.41	1	8
Corbulidae (LPIL)	M	Biva	1	0.01	99.42	1	8
<i>Argopecten gibbus</i>	M	Biva	1	0.01	99.42	1	8
<i>Aequipecten</i> (LPIL)	M	Biva	1	0.01	99.43	1	8
Thraciidae (LPIL)	M	Biva	1	0.01	99.44	1	8
<i>Chama macerophylla</i>	M	Biva	1	0.01	99.45	1	8
<i>Mactra fragilis</i>	M	Biva	1	0.01	99.45	1	8
<i>Mysella planulata</i>	M	Biva	1	0.01	99.46	1	8
<i>Asaphis deflorata</i>	M	Biva	1	0.01	99.47	1	8
<i>Tellidora cristata</i>	M	Biva	1	0.01	99.48	1	8
<i>Pitar fulminatus</i>	M	Biva	1	0.01	99.48	1	8
<i>Calliostoma pulchrum</i>	M	Gast	1	0.01	99.49	1	8
Turbinidae (LPIL)	M	Gast	1	0.01	99.50	1	8
<i>Bulla striata</i>	M	Gast	1	0.01	99.51	1	8
<i>Atys sandersoni</i>	M	Gast	1	0.01	99.51	1	8
<i>Cylichna eburnea</i>	M	Gast	1	0.01	99.52	1	8
Aclididae (LPIL)	M	Gast	1	0.01	99.53	1	8
<i>Aclis hendersoni</i>	M	Gast	1	0.01	99.54	1	8
Caecidae (LPIL)	M	Gast	1	0.01	99.54	1	8
<i>Crepidula</i> (LPIL)	M	Gast	1	0.01	99.55	1	8
<i>Melanella arcuata</i>	M	Gast	1	0.01	99.56	1	8
<i>Melanella</i> sp. E	M	Gast	1	0.01	99.57	1	8
<i>Melanella</i> (LPIL)	M	Gast	1	0.01	99.57	1	8
<i>Tectonatica pusilla</i>	M	Gast	1	0.01	99.58	1	8
Tornidae (LPIL)	M	Gast	1	0.01	99.59	1	8
<i>Macromphalina palmaritoris</i>	M	Gast	1	0.01	99.60	1	8
Buccinidae (LPIL)	M	Gast	1	0.01	99.60	1	8
<i>Cancellaria reticulata</i>	M	Gast	1	0.01	99.61	1	8
<i>Olivella dealbata</i>	M	Gast	1	0.01	99.62	1	8
<i>Olivella</i> (LPIL)	M	Gast	1	0.01	99.63	1	8
<i>Cerodrillia thea</i>	M	Gast	1	0.01	99.63	1	8
<i>Bellaspira pentagonalis</i>	M	Gast	1	0.01	99.64	1	8
<i>Ithyicythara lanceolata</i>	M	Gast	1	0.01	99.65	1	8
Pyramidellidae (LPIL)	M	Gast	1	0.01	99.66	1	8
<i>Odostomia weberi</i>	M	Gast	1	0.01	99.66	1	8
<i>Pleurobranchus</i> (LPIL)	M	Gast	1	0.01	99.67	1	8
Amphilochidae (LPIL)	Ar	Mala	1	0.01	99.68	1	8
<i>Unciola irrorata</i>	Ar	Mala	1	0.01	99.69	1	8
<i>Batea</i> (LPIL)	Ar	Mala	1	0.01	99.69	1	8
<i>Phthisica marina</i>	Ar	Mala	1	0.01	99.70	1	8
<i>Listriella</i> (LPIL)	Ar	Mala	1	0.01	99.71	1	8
<i>Elasmopus</i> sp. H	Ar	Mala	1	0.01	99.72	1	8
<i>Neomegamphopus hiatus</i>	Ar	Mala	1	0.01	99.72	1	8
Stenothoidae (LPIL)	Ar	Mala	1	0.01	99.73	1	8
Diastyliidae (LPIL)	Ar	Mala	1	0.01	99.74	1	8
<i>Automate</i> (LPIL)	Ar	Mala	1	0.01	99.75	1	8
<i>Alpheus</i> sp. B	Ar	Mala	1	0.01	99.75	1	8
<i>Alpheopsis</i> (LPIL)	Ar	Mala	1	0.01	99.76	1	8
<i>Synalpheus</i> (LPIL)	Ar	Mala	1	0.01	99.77	1	8
<i>Paguristes</i> (LPIL)	Ar	Mala	1	0.01	99.78	1	8
Dromiidae (LPIL)	Ar	Mala	1	0.01	99.78	1	8
<i>Latreutes parvulus</i>	Ar	Mala	1	0.01	99.79	1	8
<i>Latreutes fucorum</i>	Ar	Mala	1	0.01	99.80	1	8

Table 7 continued:

Taxon Name	Phylum	Class	No. of Individuals	% Total	Cumulative	Station Occurrence	% Station Occurrence
<i>Leucosiidae (LPIL)</i>	Ar	Mala	1	0.01	99.81	1	8
<i>Lithadia cadaverosa</i>	Ar	Mala	1	0.01	99.81	1	8
<i>Lucifer faxoni</i>	Ar	Mala	1	0.01	99.82	1	8
<i>Trachypenaeus (LPIL)</i>	Ar	Mala	1	0.01	99.83	1	8
<i>Parapinnixa hendersoni</i>	Ar	Mala	1	0.01	99.84	1	8
<i>Fabia tellinae</i>	Ar	Mala	1	0.01	99.84	1	8
<i>Portunidae (LPIL)</i>	Ar	Mala	1	0.01	99.85	1	8
<i>Processidae (LPIL)</i>	Ar	Mala	1	0.01	99.86	1	8
<i>Solenocera atlantidis</i>	Ar	Mala	1	0.01	99.87	1	8
<i>Eurypanopeus depressus</i>	Ar	Mala	1	0.01	99.87	1	8
<i>Chiridotea caeca</i>	Ar	Mala	1	0.01	99.88	1	8
<i>Carpias bermudensis</i>	Ar	Mala	1	0.01	99.89	1	8
<i>Heteromysis (LPIL)</i>	Ar	Mala	1	0.01	99.90	1	8
<i>Stomatopoda (LPIL)</i>	Ar	Mala	1	0.01	99.90	1	8
<i>Squillidae (LPIL)</i>	Ar	Mala	1	0.01	99.91	1	8
<i>Metosquilla (LPIL)</i>	Ar	Mala	1	0.01	99.92	1	8
<i>Eurysquilla plumata</i>	Ar	Mala	1	0.01	99.93	1	8
<i>Neogonodactylus wennerae</i>	Ar	Mala	1	0.01	99.93	1	8
<i>Kallipseudes bahamaensis</i>	Ar	Mala	1	0.01	99.94	1	8
<i>Tanaissus sp. B</i>	Ar	Mala	1	0.01	99.95	1	8
<i>Asteropterygion oculitristis</i>	Ar	Ostra	1	0.01	99.96	1	8
<i>Rutiderma mollitum</i>	Ar	Ostra	1	0.01	99.96	1	8
<i>Eusarsella (LPIL)</i>	Ar	Ostra	1	0.01	99.97	1	8
<i>Ophiothrix (LPIL)</i>	E	Ophi	1	0.01	99.98	1	8
<i>Leptosynapta tenuis</i>	E	Holo	1	0.01	99.99	1	8
<i>Leptosynapta (LPIL)</i>	E	Holo	1	0.01	99.99	1	8
<i>Mellitidae (LPIL)</i>	E	Echin	1	0.01	100.00	1	8

TAXA KEY

Phylum

Class

A= Annelida

Poly= Polychaeta

Ar= Arthropoda

Ostra= Ostracoda

Mala= Malacostraca

E= Echinodermata

Ophi= Ophiuroidea

Holo= Holothuroidea

Echi= Echinoidea

M= Mollusca

Biva= Bivalvia

Gast= Gastropoda

R= Rhynchocoela

Anop= Anopla

C= Chordata

Lept= Leptocardia

S= Sipuncula

Table 8. Percent abundance of dominant taxa (> 10% of the total assemblage) for the Ft. Pierce, Florida ODMDS stations, July 1999.

Taxa	1	2	3	4	5	6	7	8	9	10	11	12
ANNELIDA												
Polychaeta												
<i>Goniadides carolinae</i>	13.7	21.5	24.0	11.8	13.4	29.7	14.2			12.6	14.5	
<i>Protodorvillea kefersteini</i>					12.8			12.3			10.2	
Oligochaeta (LPIL)		13.0										
MOLLUSCA												
<i>Limopsis cristata</i>								10.8				
ARTHROPODA												
<i>Maera caroliniana</i>						17.5						
SIPUNCULA												
<i>Sipuncula</i> (LPIL)					10.4							

Table 9. Summary of assemblage parameters for the Ft. Pierce, Florida ODMDS stations, July 1999.

Table 9 continued:

Table 9 continued:

Table 9 continued:

Summary by Replicate					Summary by Station					
Station	Rep	Taxa	Indvs	Density	Mean No. Taxa	Taxa (Std. Dev.)	Mean Density	Density (std. dev.)	Taxa Diversity H'	Taxa Evenness J'
10	M	46	77	9747						
	N	27	33	4177						
	O	31	40	5063						
11	A	38	75	9494		29.80	8.60	7843.9	3903.7	4.13
	B	19	30	3797						0.76
	C	26	55	6962						
	D	38	66	8354						
	E	25	41	5190						
	F	29	58	7342						
	G	29	54	6835						
	H	51	114	14430						
	I	32	53	6709						
	J	22	35	4430						
	K	47	72	9114						
	L	22	32	4051						
	M	21	50	6329						
	N	32	77	9747						
	O	35	51	6456						
	P	36	56	7089						
	Q	24	69	8734						
	R	42	99	12532						
	S	24	40	5063						
	T	16	25	3165						
	U	25	70	8861						
	V	31	52	6582						
	W	27	52	6582						
	X	44	182	23038						
	Y	27	70	8861						
	Z	14	15	1899						
	AA	25	62	7848						
	AB	32	57	7215						
	AC	40	85	10759						
	AD	34	62	7848						
12	A	34	54	6835		26.30	9.50	6649.8	2960.5	3.95
	B	44	96	12152						0.80
	C	38	65	8228						
	D	23	58	7342						
	E	19	31	3924						
	F	19	33	4177						
	G	20	33	4177						
	H	32	71	8987						
	I	47	93	11772						
	J	29	44	5570						
	K	17	23	2911						
	L	15	23	2911						
	M	32	71	8987						
	N	25	55	6962						
	O	21	38	4810						

Table 10. Wet-weight and standing stock biomass summary for the Ft. Pierce, Florida ODMDS stations, July 1999.

Taxa	Station	Mean Wet Weight (gm)	Mean SCB (gm/m ²)
Annelida	1	0.028	3.509
Arthropoda		0.017	2.127
Mollusca		0.029	3.662
Echinodermata		0.002	0.237
Other Taxa		0.008	1.009
Total		0.083	10.544
Annelida	2	0.079	9.991
Arthropoda		0.033	4.189
Mollusca		1.317	166.743
Echinodermata		0.002	0.262
Other Taxa		0.046	5.879
Total		1.478	187.063
Annelida	3	0.067	8.446
Arthropoda		0.042	5.269
Mollusca		0.023	2.884
Echinodermata		0.009	1.087
Other Taxa		0.008	1.063
Total		0.148	18.749
Annelida	4	0.073	9.232
Arthropoda		0.034	4.269
Mollusca		0.034	4.264
Echinodermata		0.004	0.513
Other Taxa		0.043	5.451
Total		0.187	23.730
Annelida	5	0.057	7.213
Arthropoda		0.027	3.425
Mollusca		0.050	6.359
Echinodermata		0.021	2.602
Other Taxa		0.018	2.255
Total		0.173	21.853
Annelida	6	0.042	5.262
Arthropoda		0.024	3.050
Mollusca		0.023	2.876
Echinodermata		0.004	0.554
Other Taxa		0.016	2.050
Total		0.109	13.792
Annelida	7	0.096	12.095
Arthropoda		0.050	6.315
Mollusca		1.087	137.552
Echinodermata		0.009	1.195
Other Taxa		0.067	8.419
Total		1.308	165.575

Table 10 continued:

Taxa	Station	Mean Wet Weight (gm)	Mean SCB (gm/m ²)
Annelida	8	0.041	5.248
Arthropoda		0.014	1.803
Mollusca		0.079	9.943
Echinodermata		0.018	2.275
Other Taxa		0.024	3.093
Total		0.177	22.362
Annelida	9	0.024	3.084
Arthropoda		0.025	3.123
Mollusca		0.031	3.936
Echinodermata		0.053	6.715
Other Taxa		0.011	1.436
Total		0.145	18.294
Annelida	10	0.200	25.255
Arthropoda		0.195	24.706
Mollusca		0.109	13.755
Echinodermata		0.060	7.654
Other Taxa		0.120	15.153
Total		0.684	86.523
Annelida	11	0.030	3.816
Arthropoda		0.015	1.910
Mollusca		0.032	4.065
Echinodermata		0.016	2.073
Other Taxa		0.016	2.032
Total		0.110	13.896
Annelida	12	0.067	8.419
Arthropoda		0.015	1.850
Mollusca		0.014	1.755
Echinodermata		0.011	1.335
Other Taxa		0.015	1.921
Total		0.121	15.279

Table 11. Two-way matrix of station and taxa groups for the Ft. Pierce, Florida ODMDS stations, July 1999.

	1	3	4	A	8	9	10	12		2	5	B	7	11	C	
															6	
<i>Goniadides caroliniae</i>	66	193	14	43	55	15	114		325	179	185	235		444	1	
<i>Protodorvillea kefersteini</i>	5	69	18	54	45	81	8		121	172	76	19		17		
Oligochaeta (LPIL)	1	19	93	27	32	48	42		197	16	78	74		2		2
Rhynchocoela (LPIL)	7	56	67	19	36	64	41		8	92	58	145		42		
Sipuncula (LPIL)	7	16	67	14	23	51	33		45	14	77	19		11		
<i>Heteropodarke formalis</i>	7	57	76	4	22	21	28		31	52	12	1		1		
<i>Dentatissyllis carolinae</i>		4	32	5	3	56	21		14	22	54	25				
<i>Ancistrosyllis hartmanae</i>		23	33	7	1	5	11		46	27	16	21		8		
<i>Acuminodeutopus naglei</i>	2	12	14	22	22	14	39		6	26	18	15		12		
Ophiuroidea (LPIL)	1	2	12	7	2	51	9		34	12	22	28		5		
<i>Bhawania heteroseta</i>	5	2	8	14		19	4		19	14	15	76		1		
<i>Apopriionospio dayi</i>	13	1												12		
<i>Crassinella martinicensis</i>	7	8	15	4	27	13	13		6	17	9	2		6		3
Maldanidae (LPIL)		2	22	3	8	21	7		11	16	2	14				
<i>Tellina</i> (LPIL)	45	6				1				2				69		
<i>Limopsis cristata</i>	1			1	67	9	5		1	1	8	15				
<i>Exogone lourei</i>			13	1	3	35	9		1	19	7	17				
<i>Crassinella lunulata</i>	7	8	8	2	2	24	7		6	1	15	15		5		
<i>Caecum johnsoni</i>				8	1	25	5		14	1	17	16		1		
<i>Cyclaspis pustulata</i>	19	3	6	4	2	5			2	6	2	5		31		
<i>Maera caroliniana</i>	14	6	85	3	1	47	15		46	4	229	163		14		4

Figure 1. Locations of benthic sampling stations for the Ft. Pierce, Florida ODMDS, July 1999.

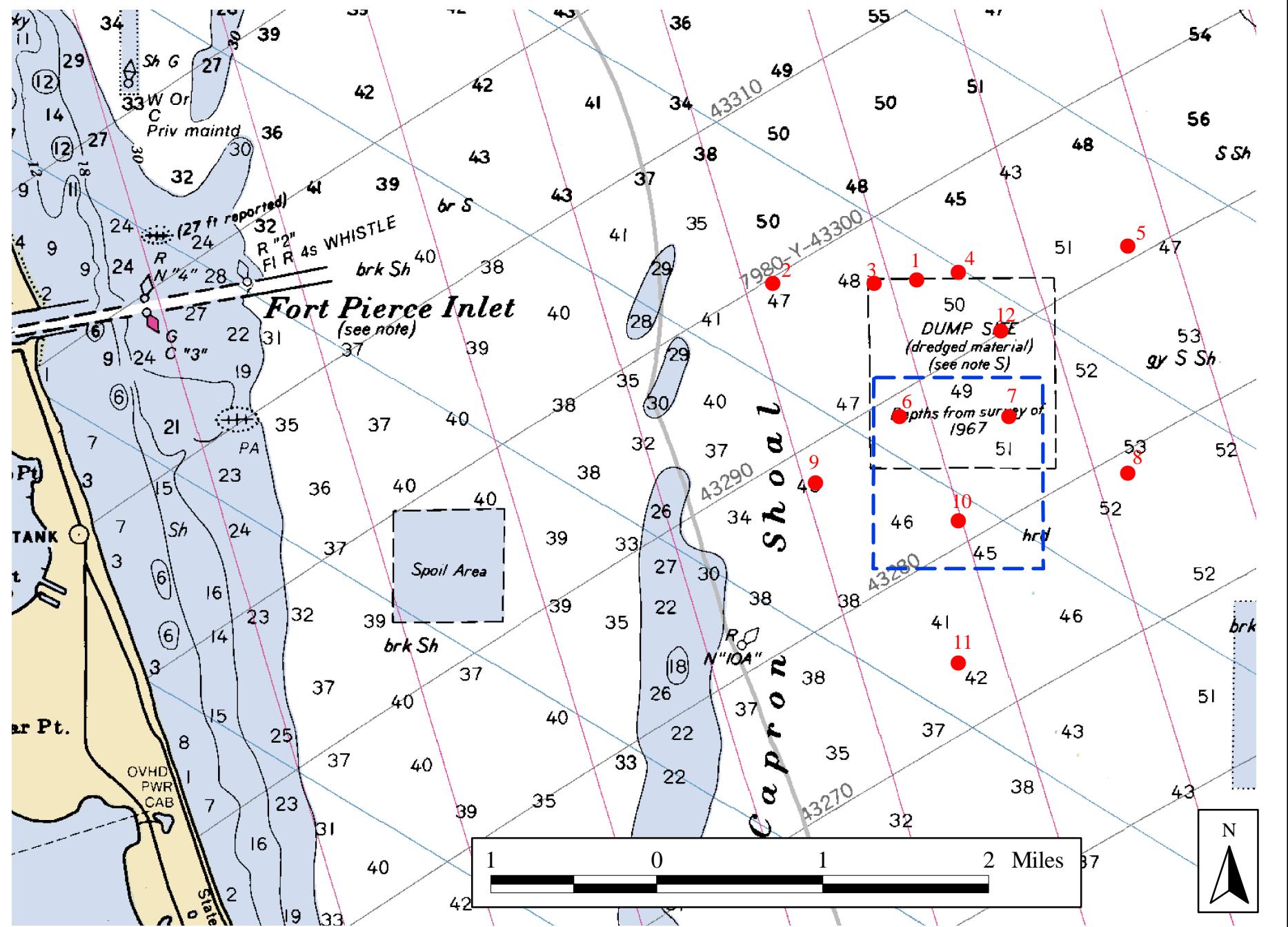
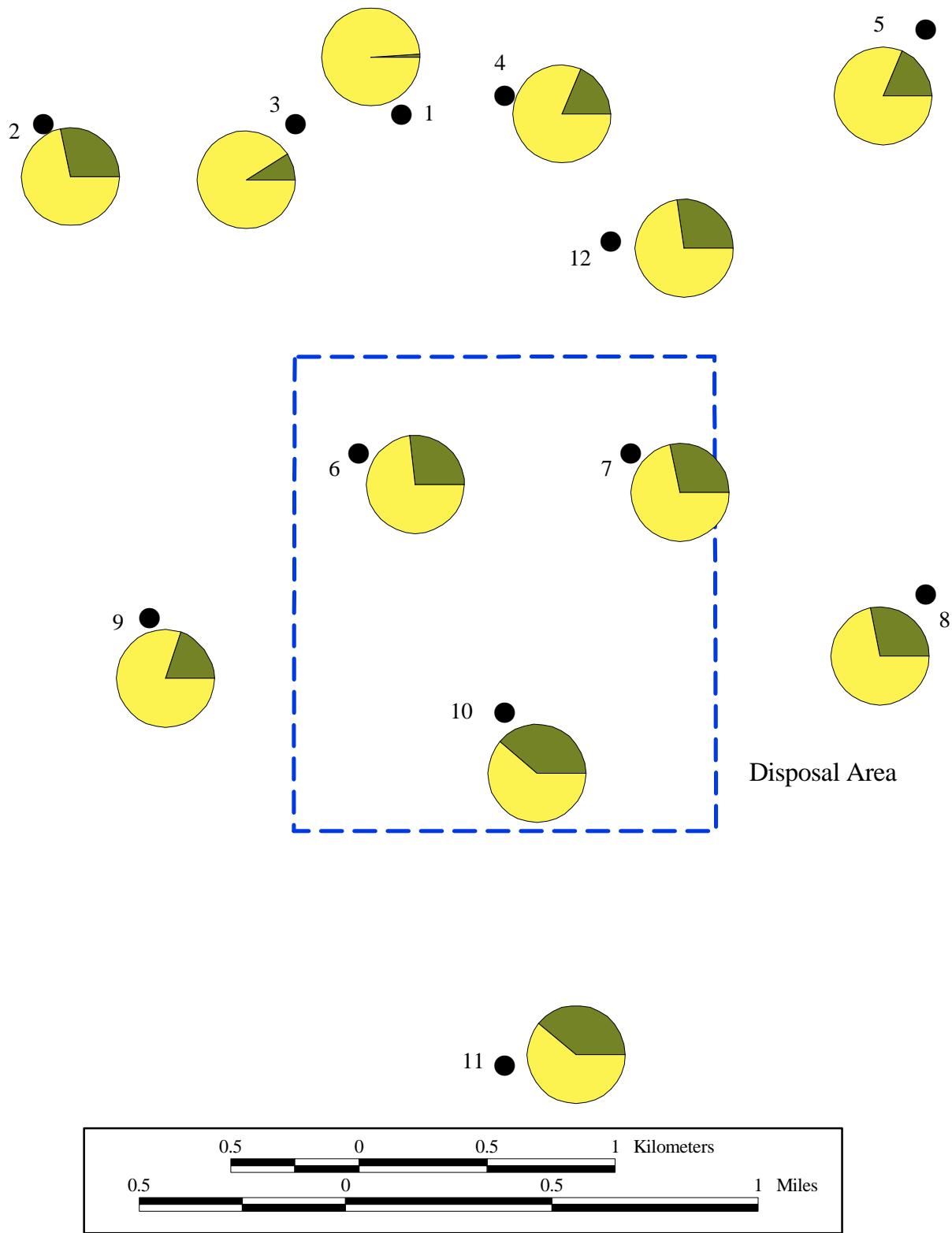


Figure 2. Spatial distribution of sediment fractions at the Ft. Pierce, Florida ODMDS stations, July 1999.



Weight Percent of Sediment Fractions

- [Green square] Greater than 2 mm
- [Yellow square] Less than 2 mm



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Figure 3. Spatial distribution of the volume fraction of sediments less than 2mm at the Ft. Pierce, Florida ODMDS stations, July 1999.

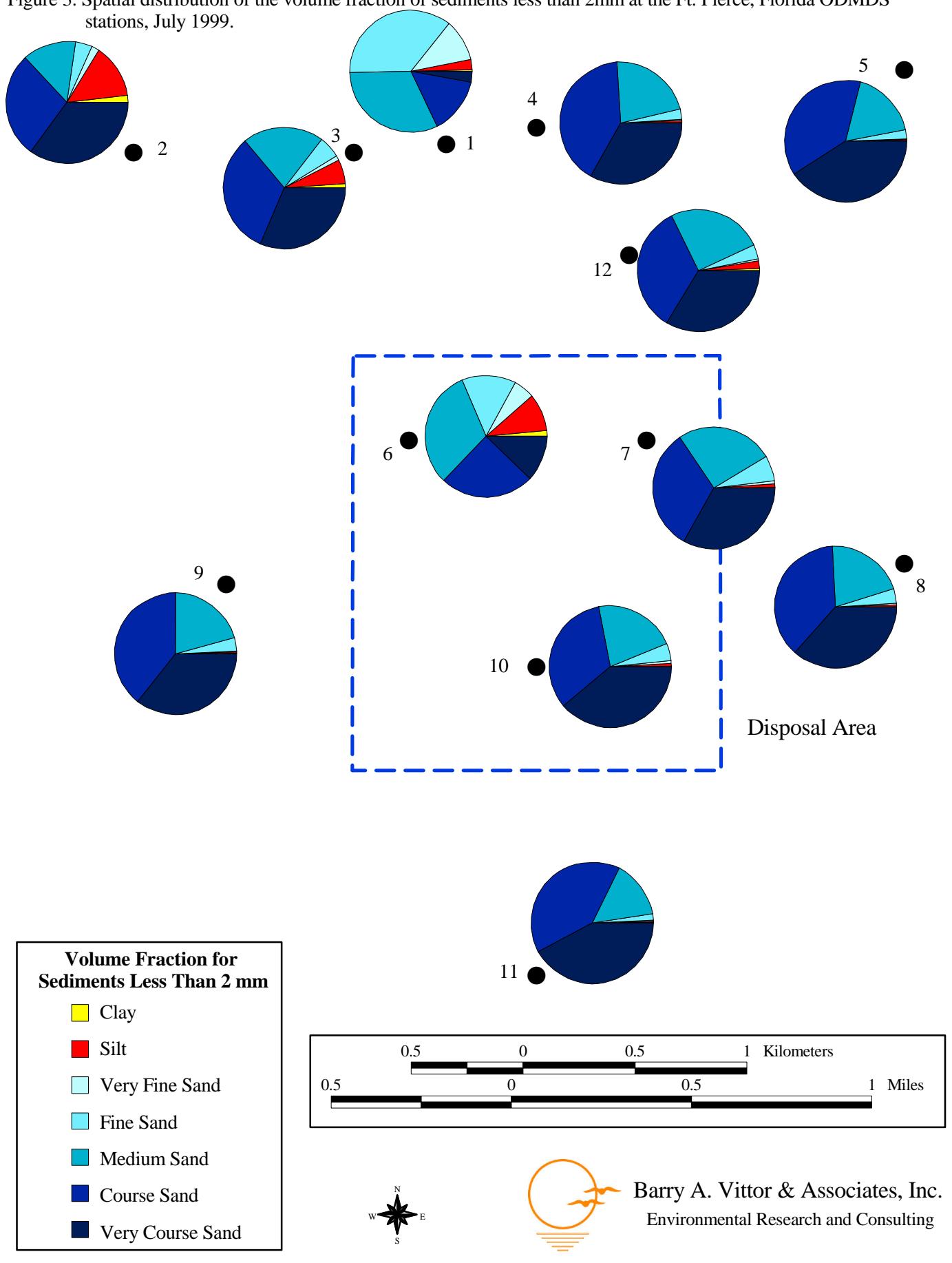


Figure 4. Sediment total organic carbon (% TOC) for the Ft. Pierce, Florida ODMDS stations, July 1999.

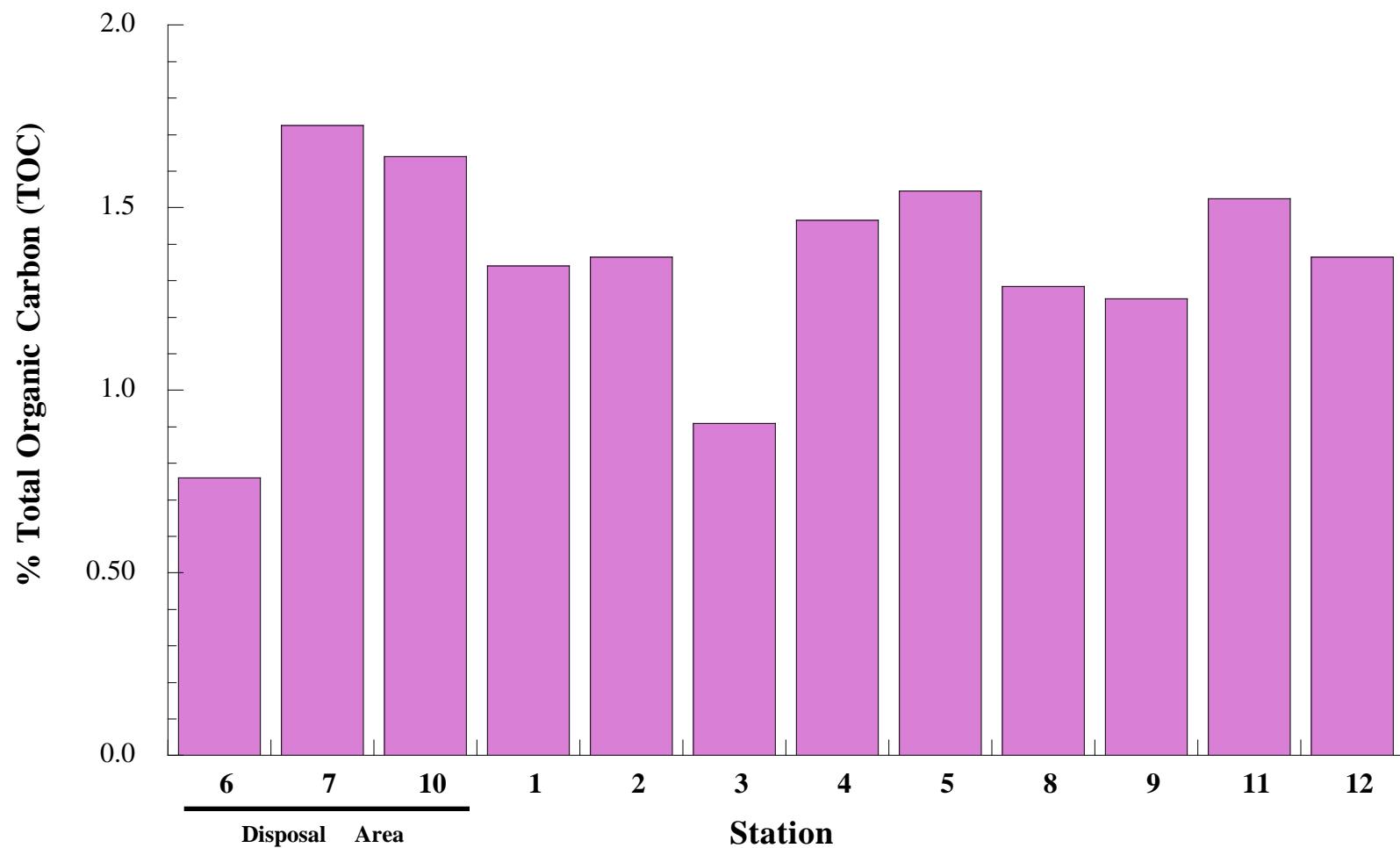
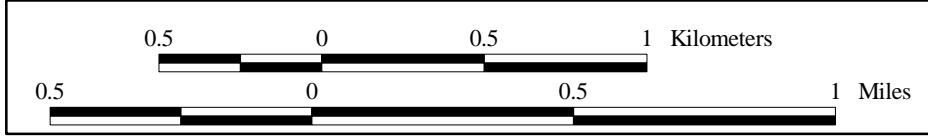
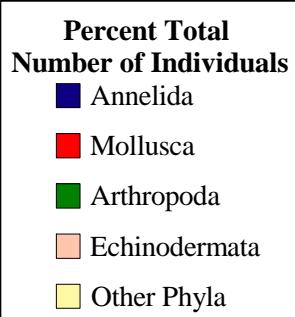
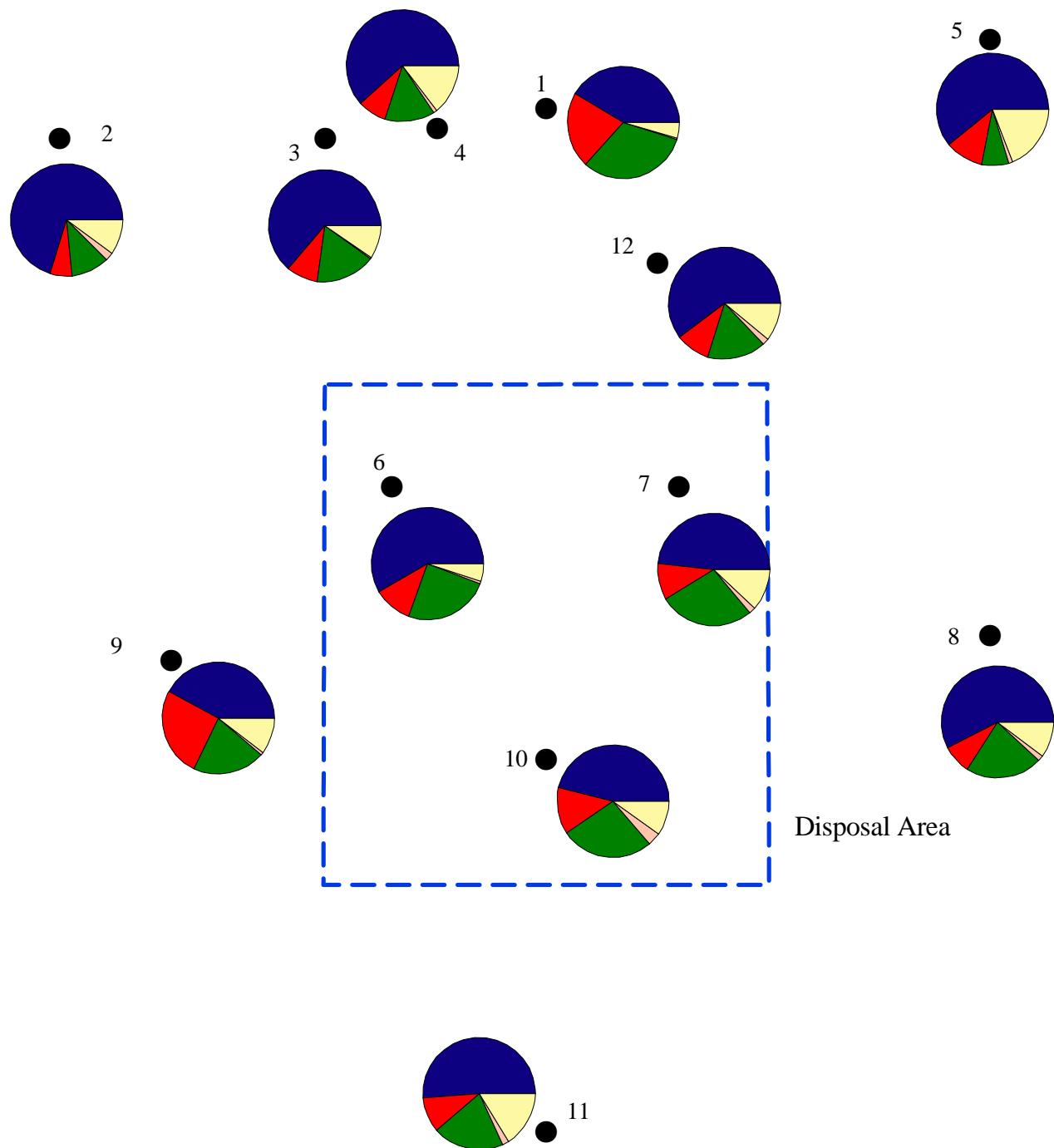


Figure 5. Spatial distribution of major taxonomic groups for the Ft. Pierce, Florida ODMDS stations, July 1999.



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Figure 6. Macroinvertebrate densities for the Ft. Pierce, Florida ODMDS stations, July 1999.

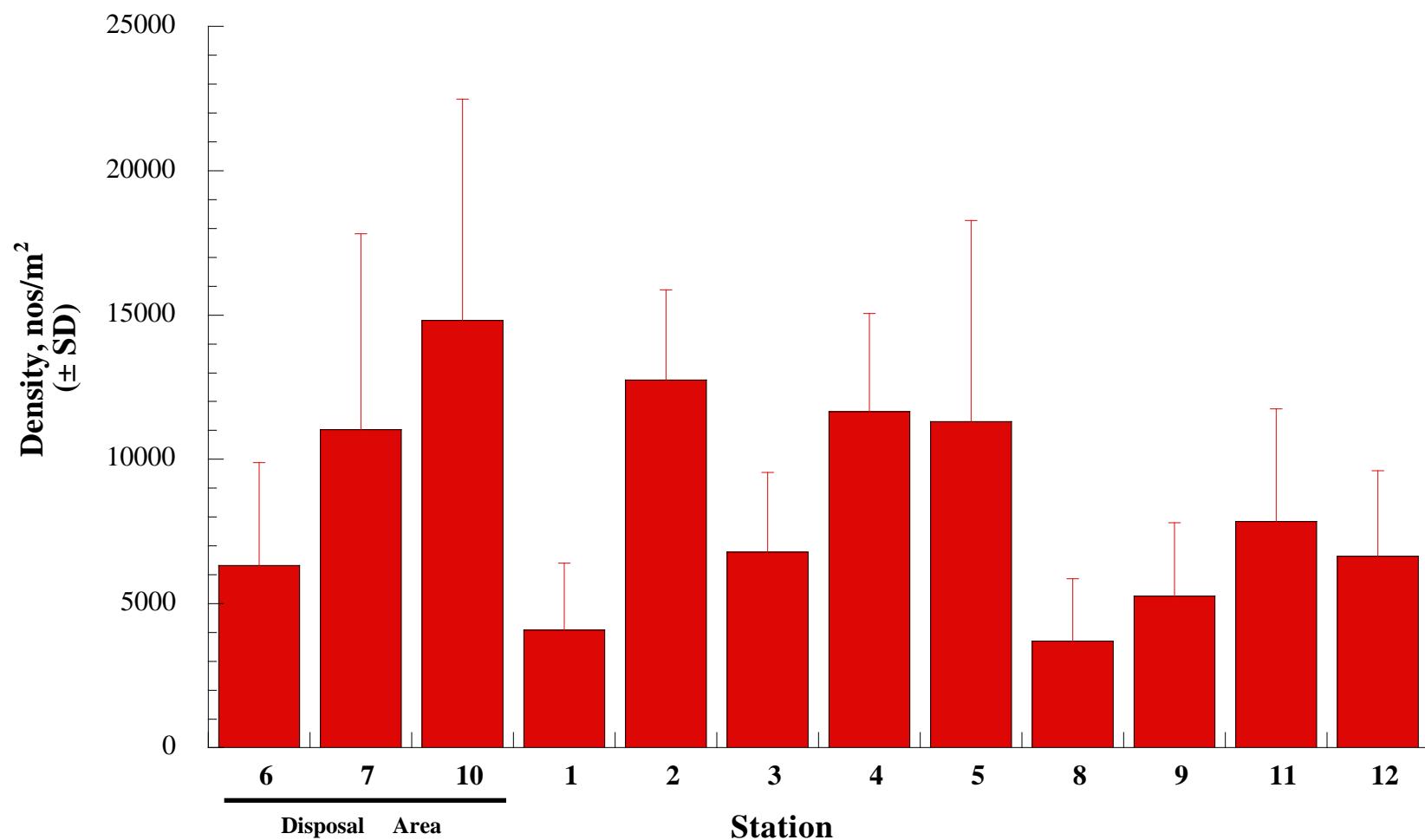
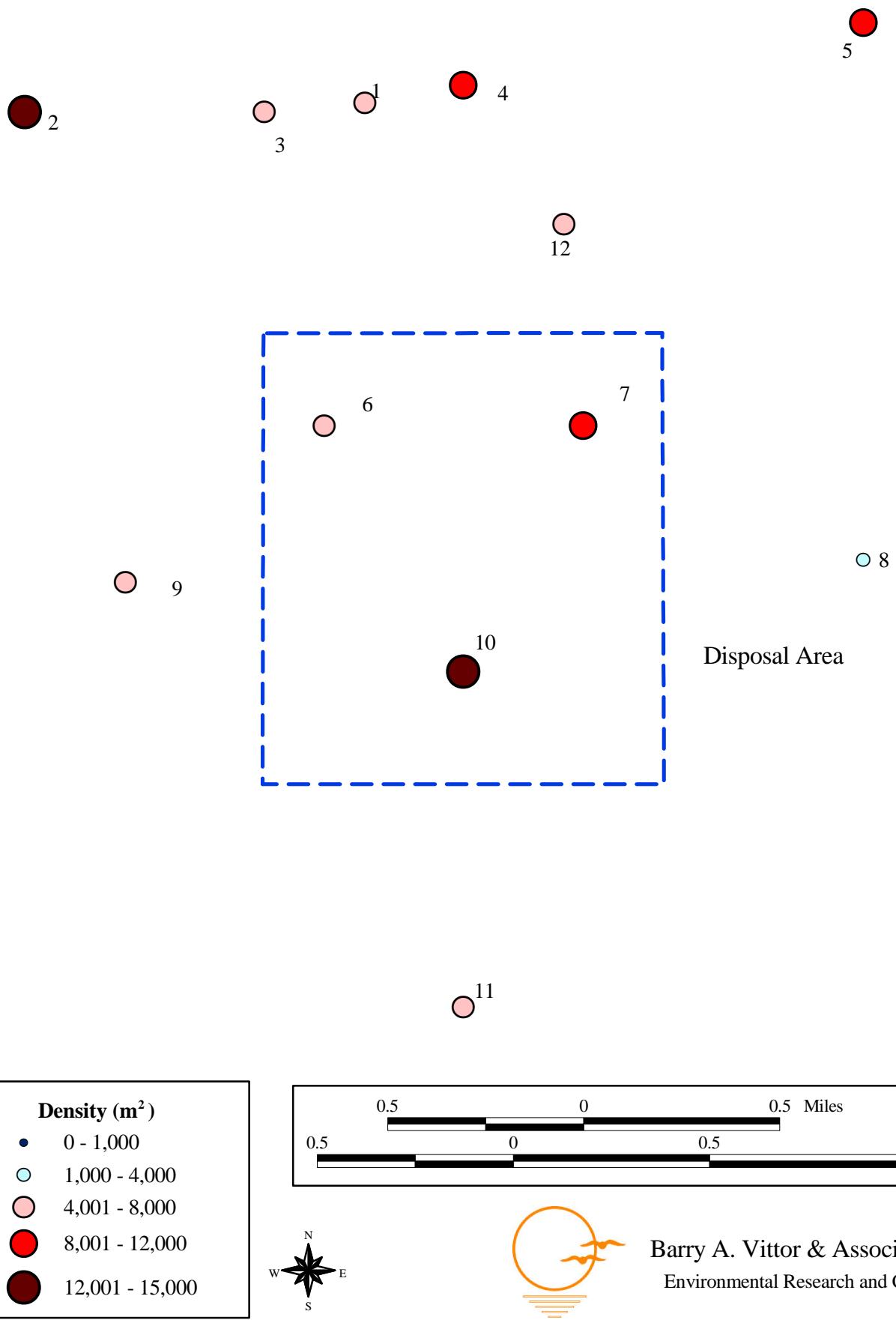


Figure 7. Spatial distribution of macroinvertebrate densities for the Ft. Pierce, Florida ODMDS stations, July 1999.



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Figure 8. Macroinvertebrate taxa richness for the Ft. Pierce, Florida ODMDS stations, July 1999.

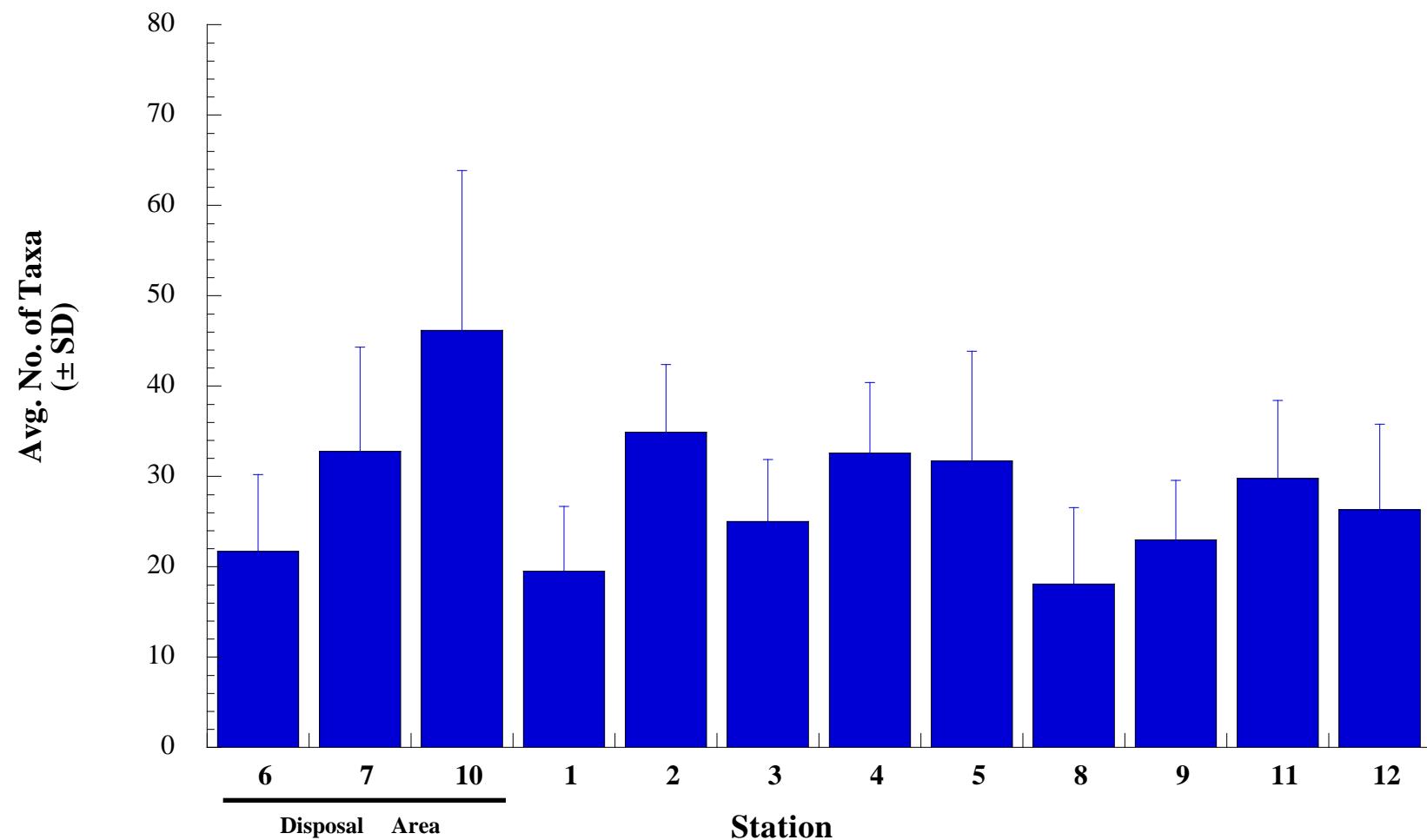
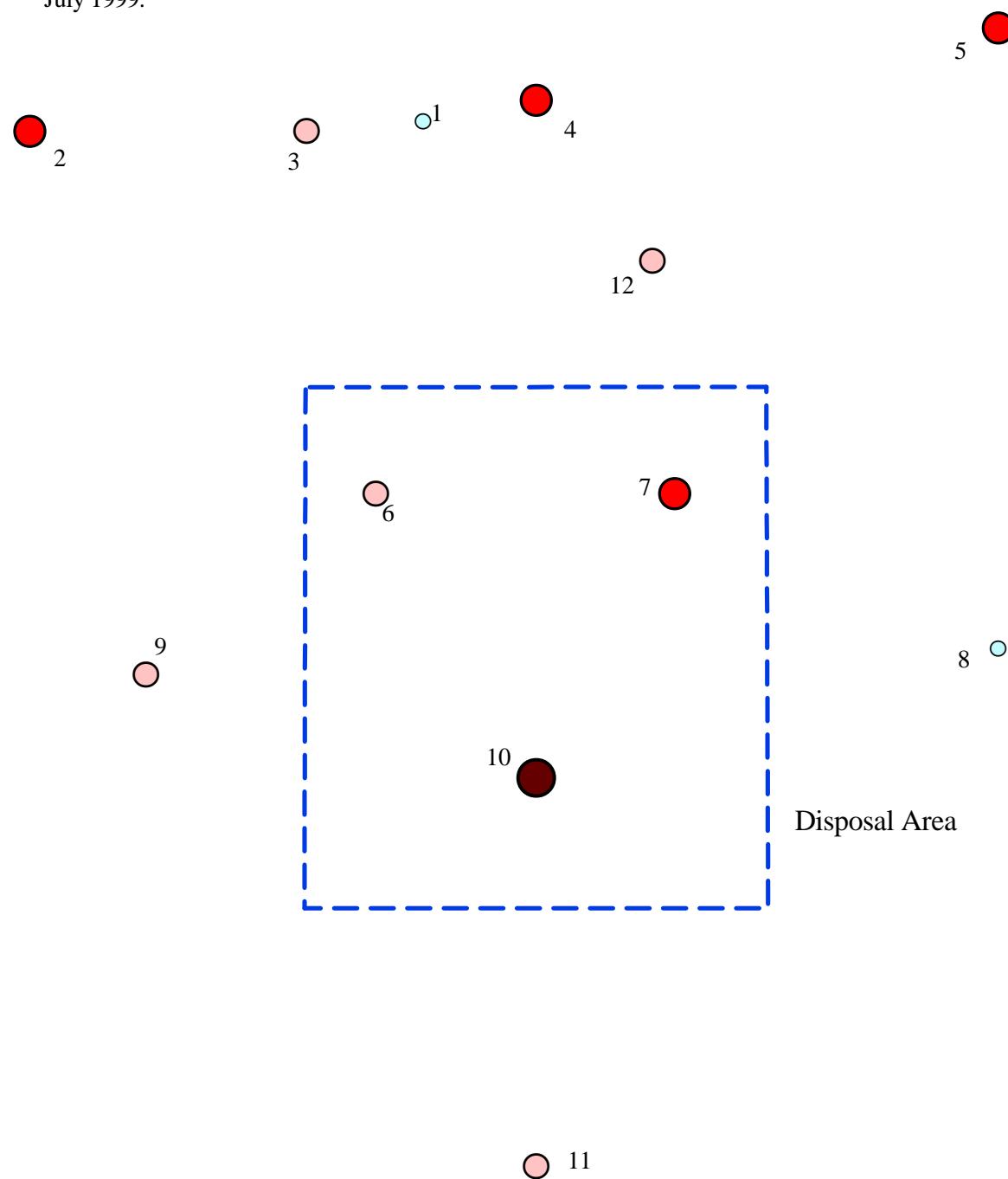
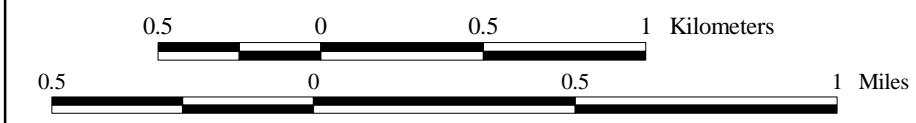


Figure 9. Spatial distribution of macroinvertebrate taxa richness for the Ft. Pierce, Florida ODMDS stations, July 1999.



Taxa Richness

- 0 - 10
- 10.1 - 20
- 20.1 - 30
- 30.1 - 40
- 40.1 - 50



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Figure 10. Taxa diversity (H') and evenness (J') for the Ft. Pierce, Florida ODMDS stations, July 1999.

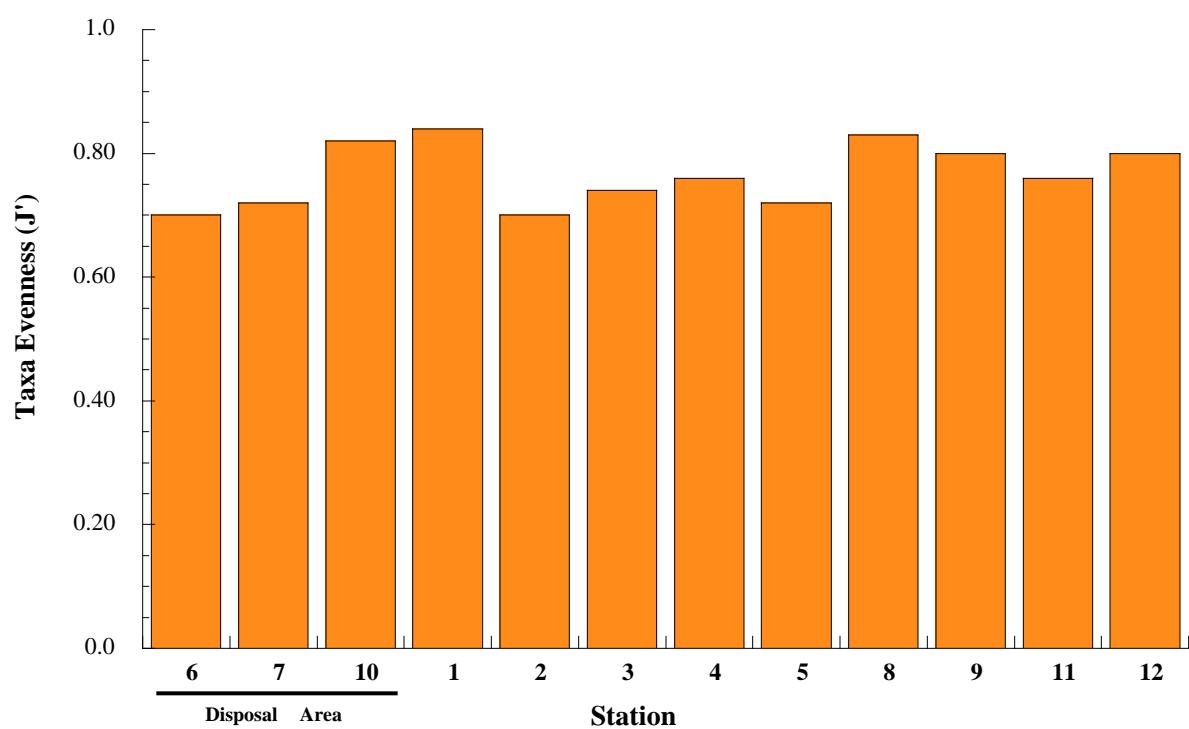
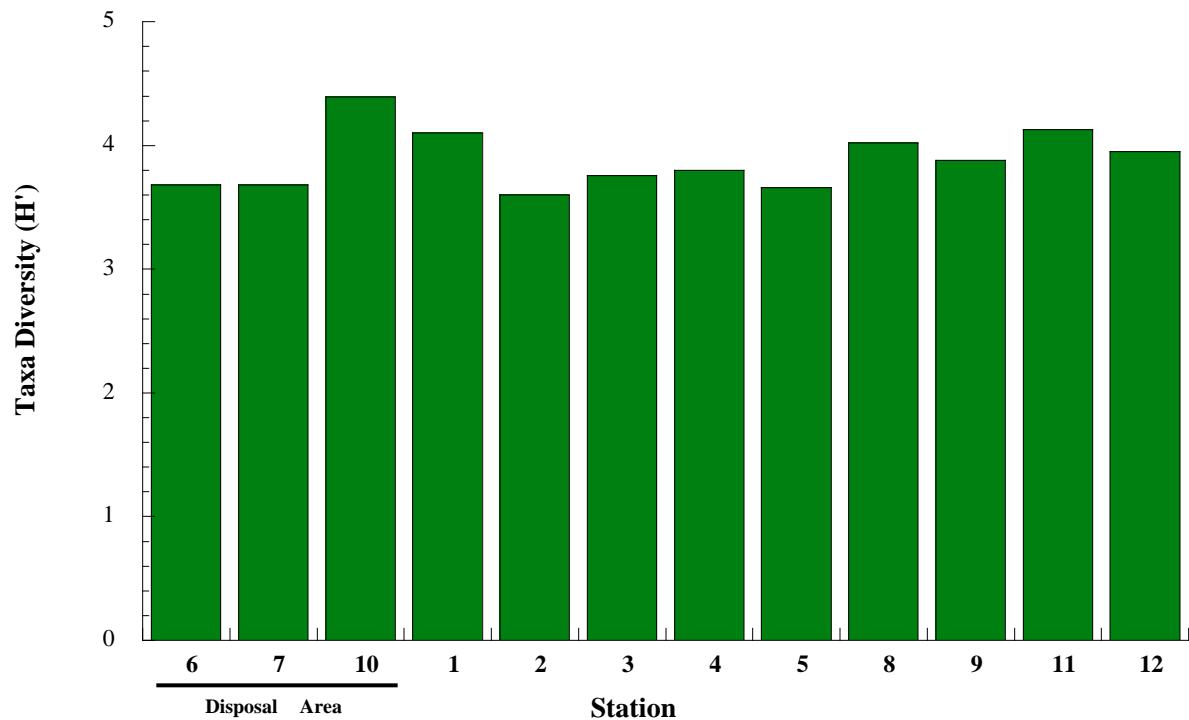
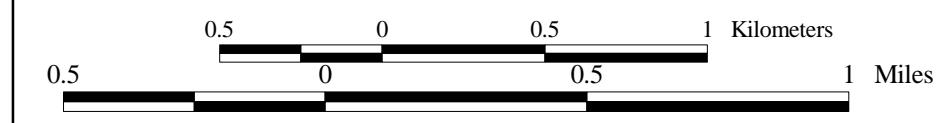
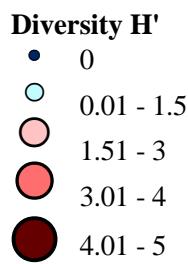
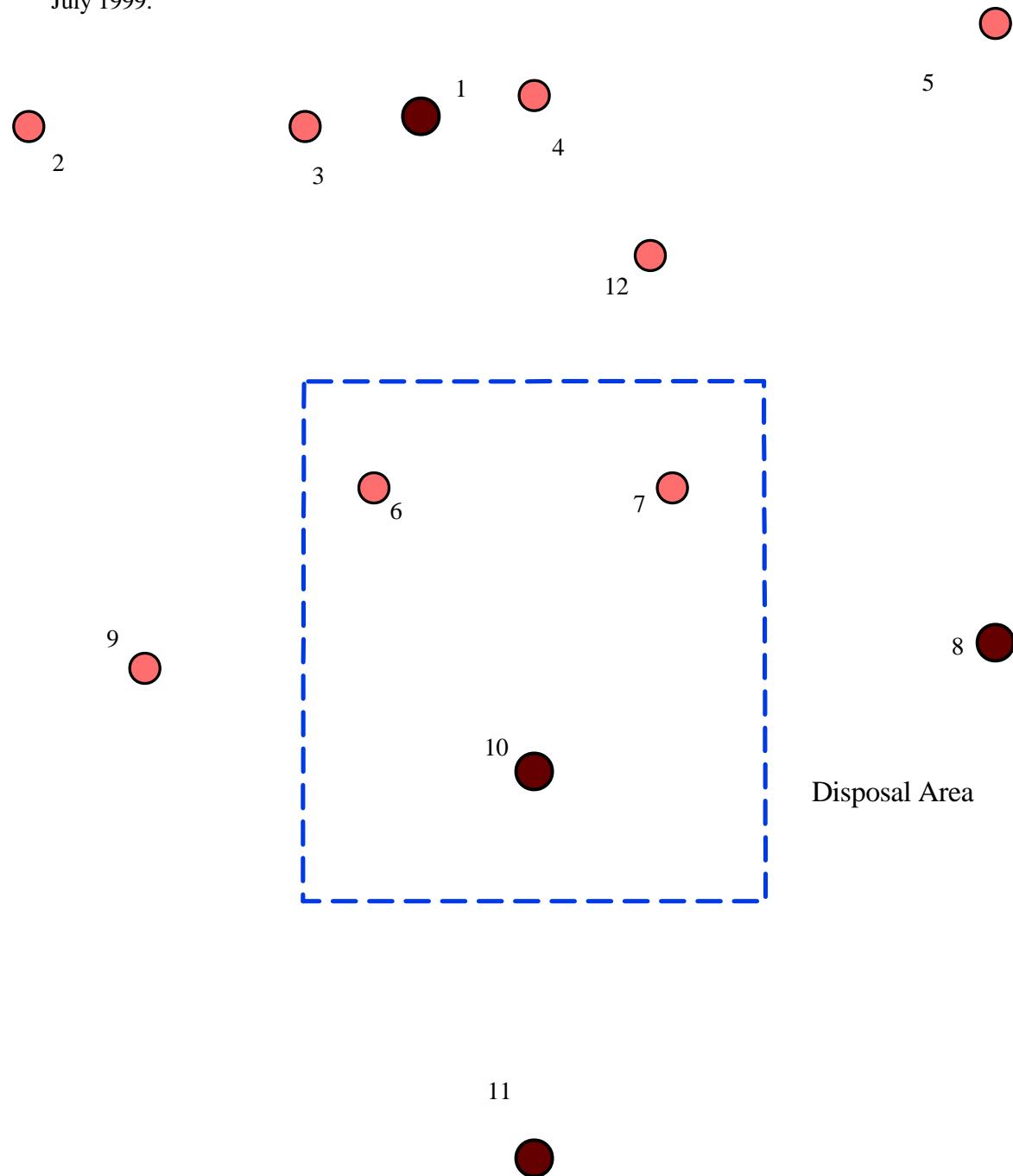
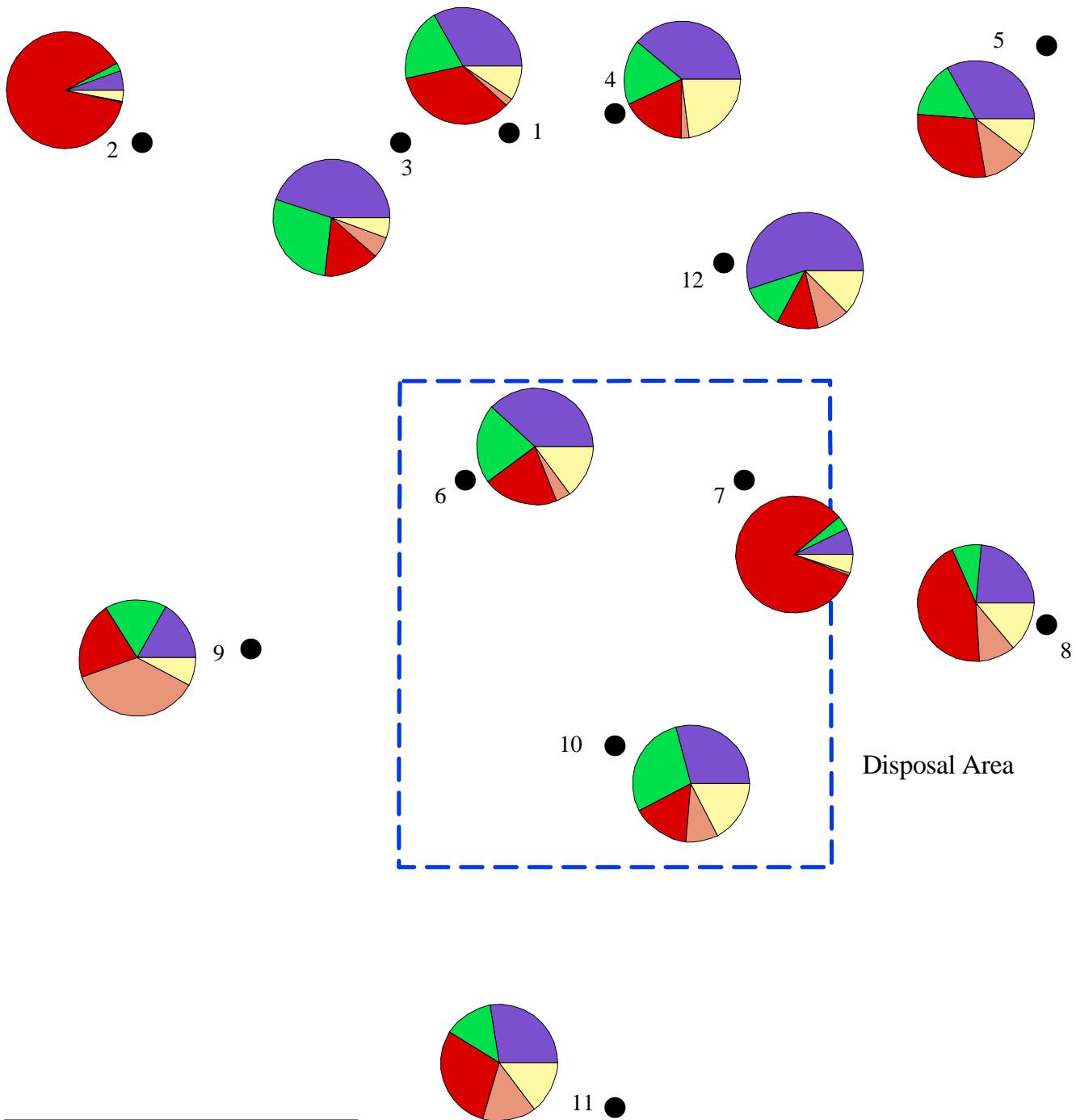


Figure 11. Spatial distribution of macroinvertebrate taxa diversity (H') for the Ft. Pierce, Florida ODMDS stations, July 1999.



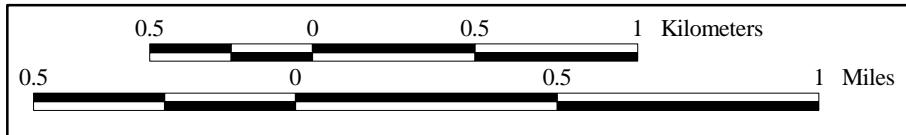
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Figure 12. Total biomass summary for the Ft. Pierce, Florida ODMDS stations, July 1999.



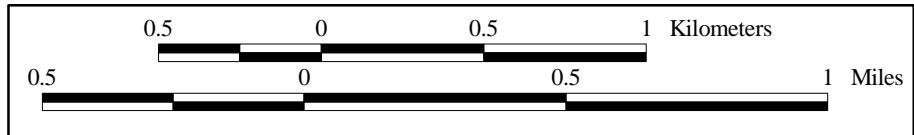
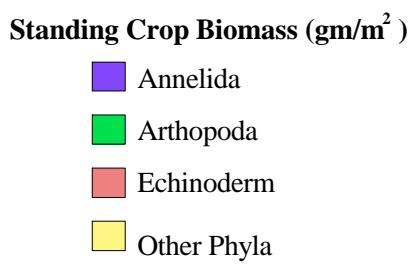
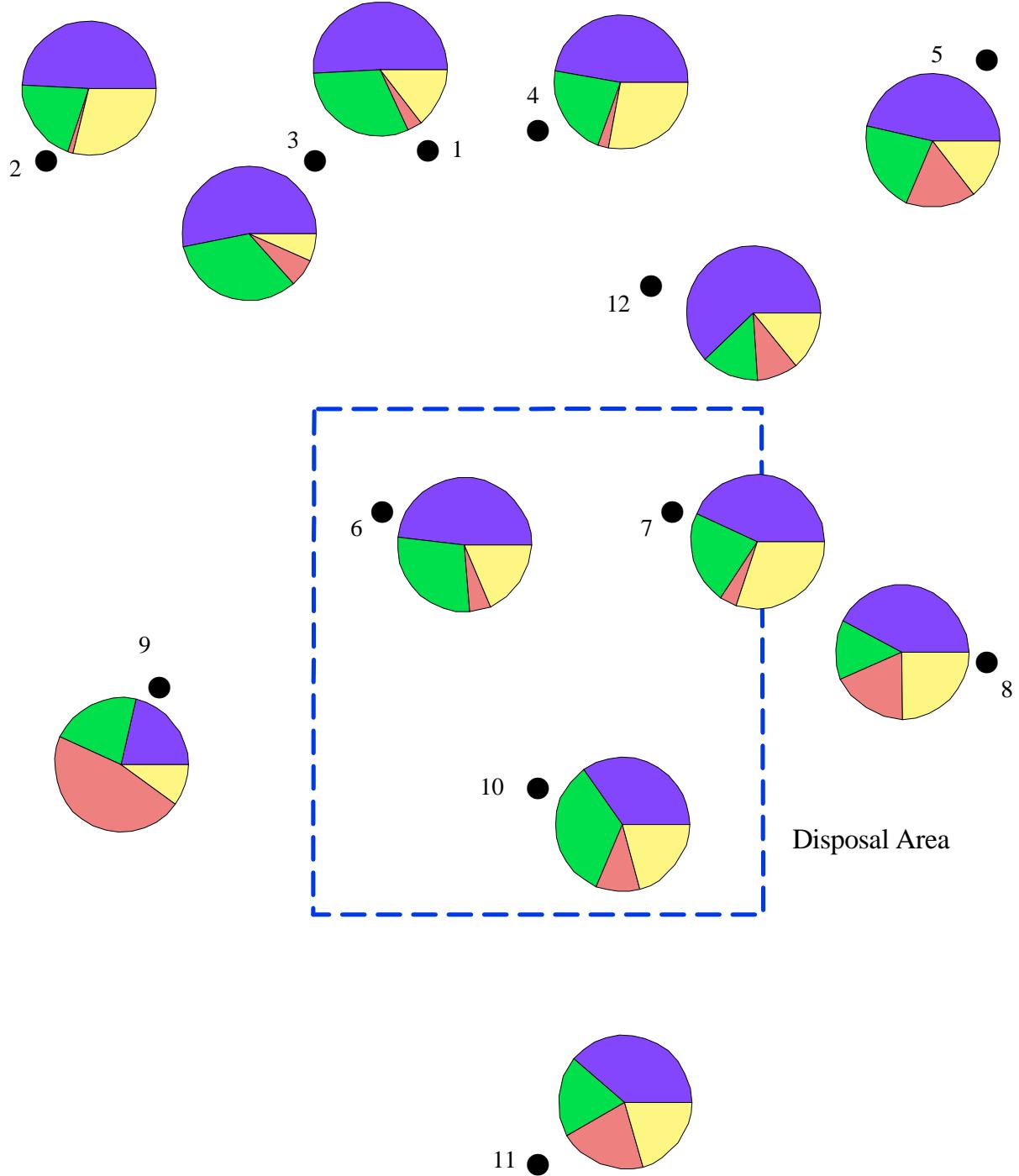
Standing Crop Biomass (gm/m^2)

- Annelida
- Arthropoda
- Mollusca
- Echinoderm
- Other Phyla



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Figure 13. Total biomass summary without molluscs for the Ft. Pierce, Florida ODMDS stations, July 1999.



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Figure 14. Station dendrogram for the Ft. Pierce, Florida ODMDS stations, July 1999.

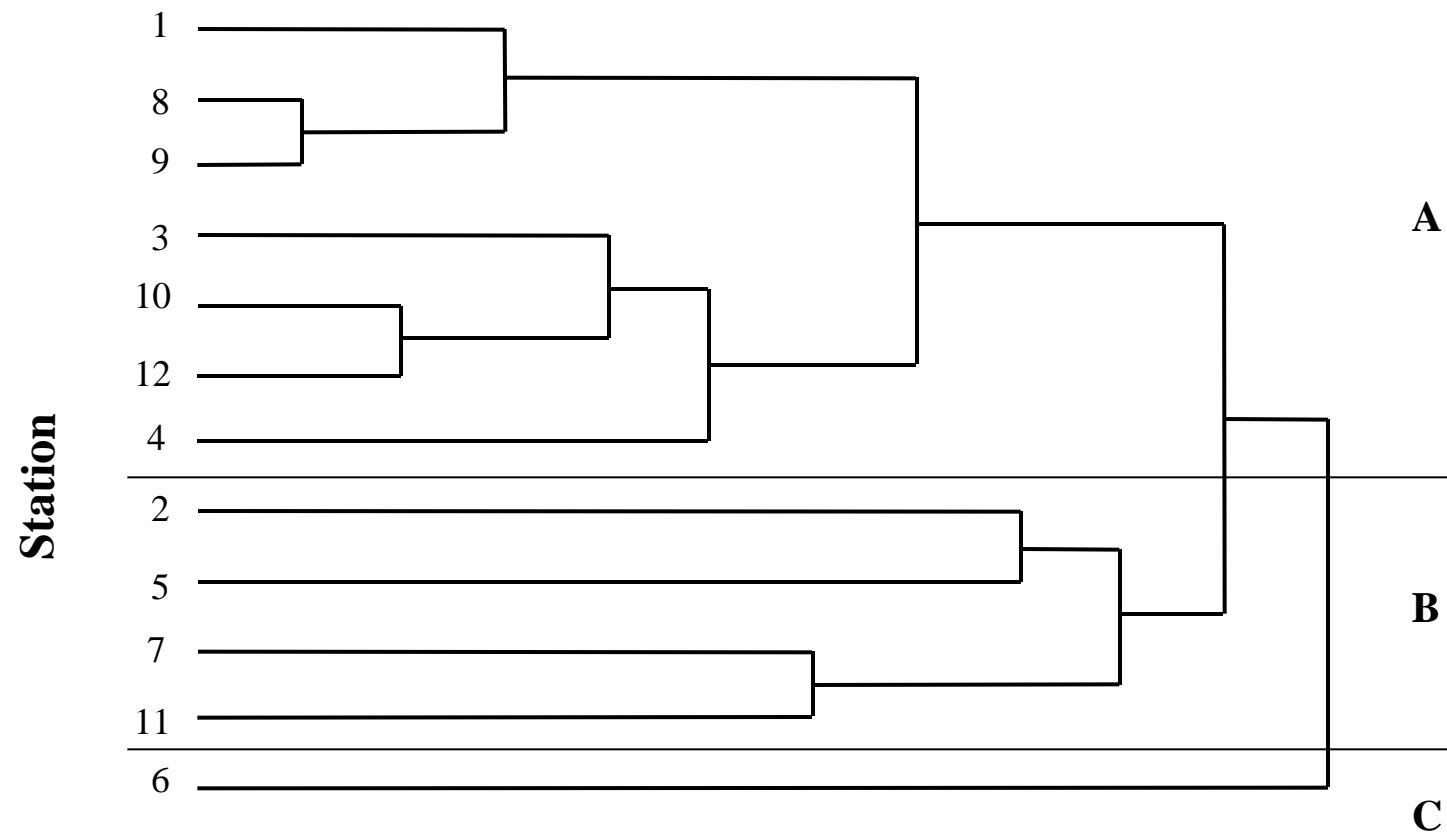


Figure 15. Taxa dendrogram for the Ft. Pierce, Florida ODMDS stations, July 1999.

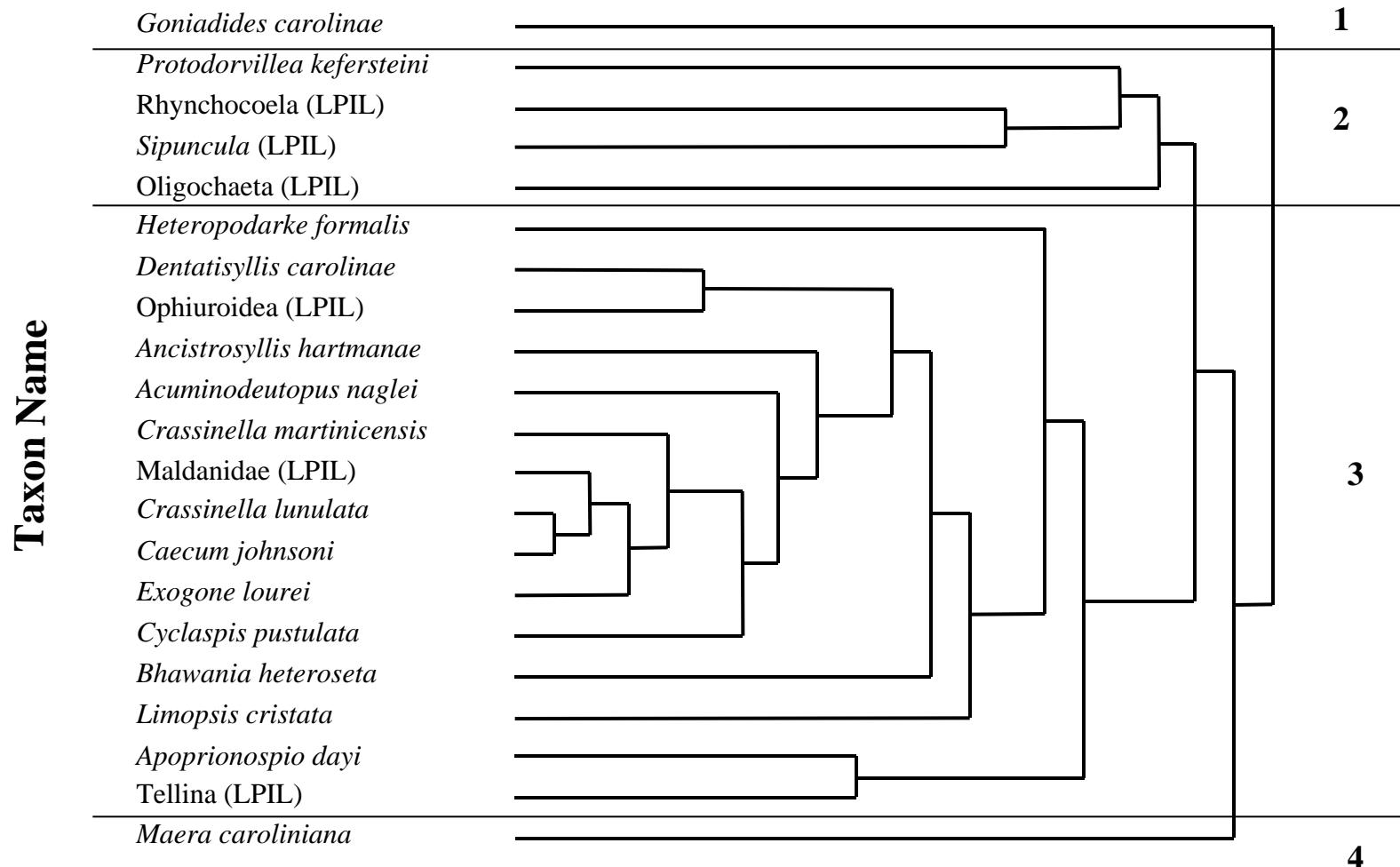


Figure 16. Spatial distribution of major taxonomic groups for the Ft. Pierce, Florida ODMDS stations, July 1992.

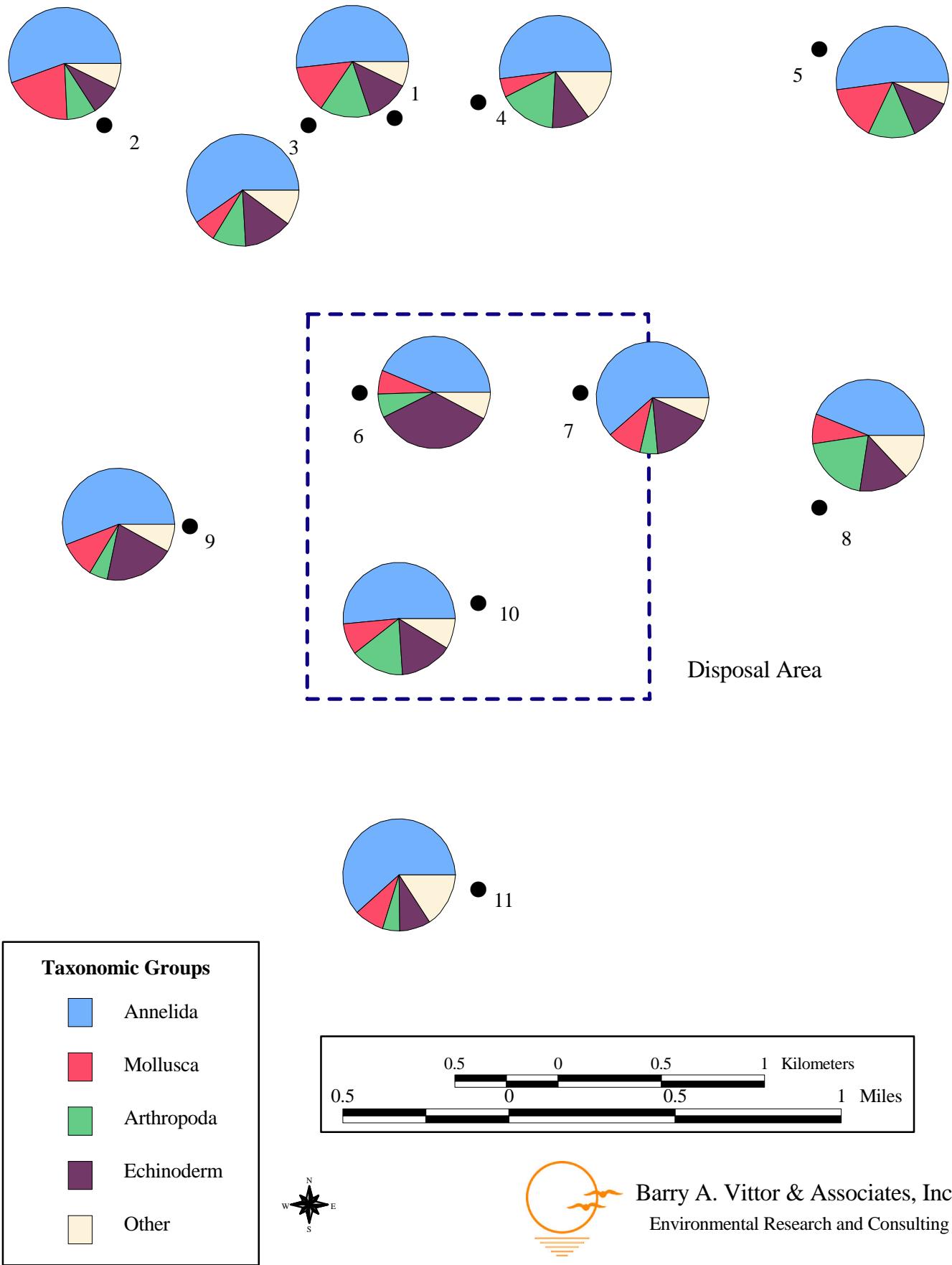


Figure 17. Comparisons of macroinvertebrate densities for the Ft. Pierce, Florida ODMDS stations, 1992 and 1999.

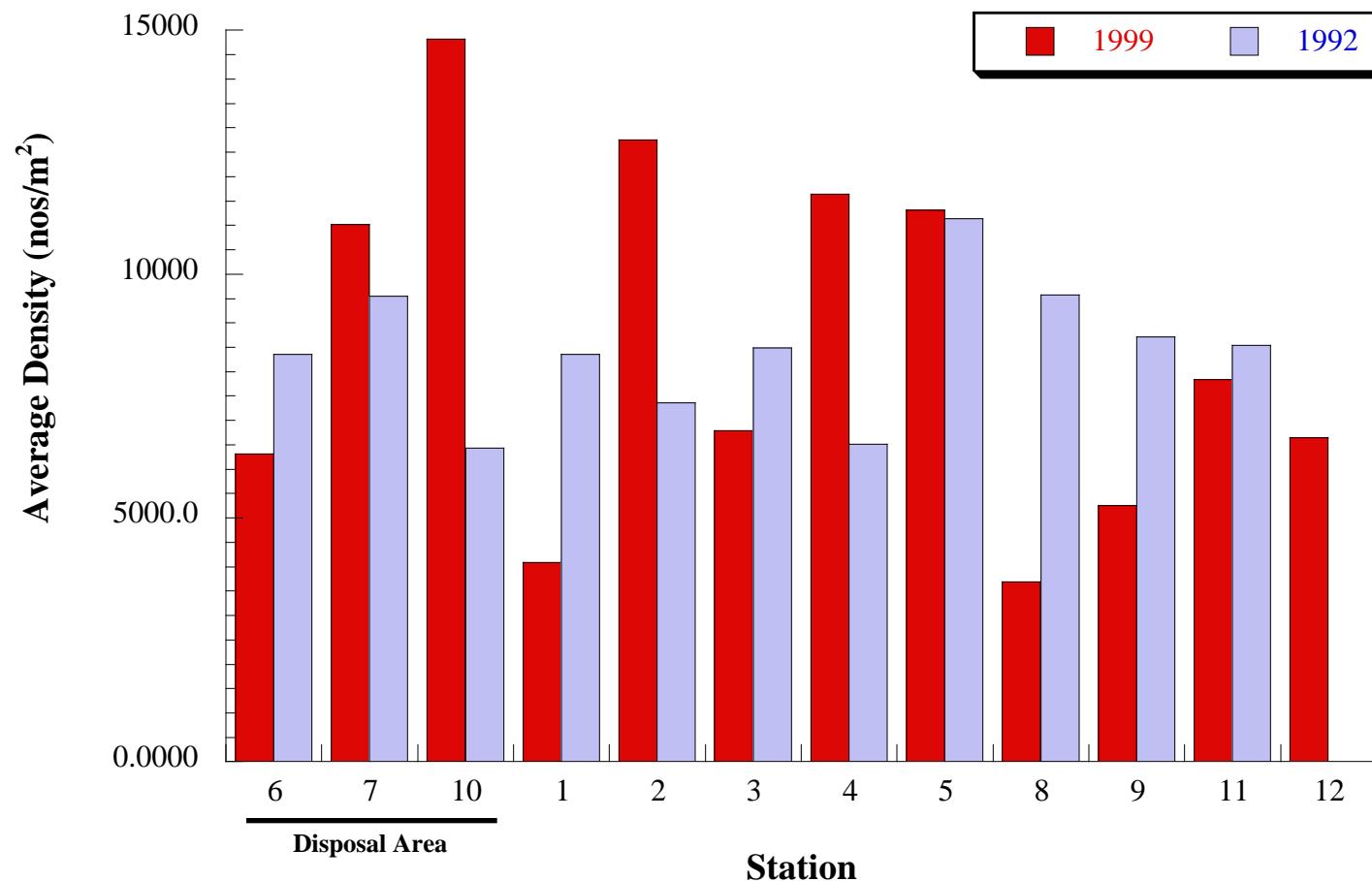
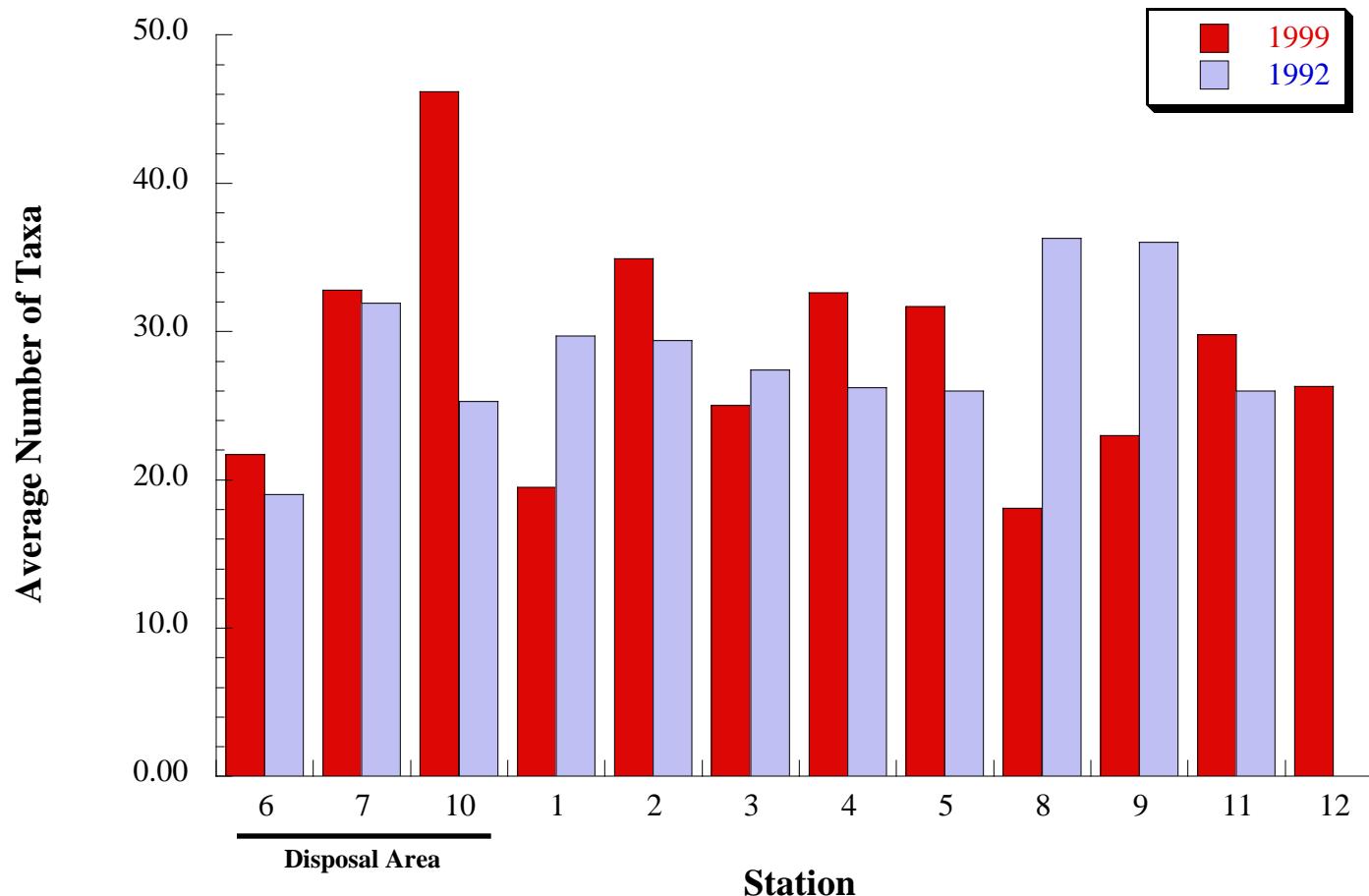
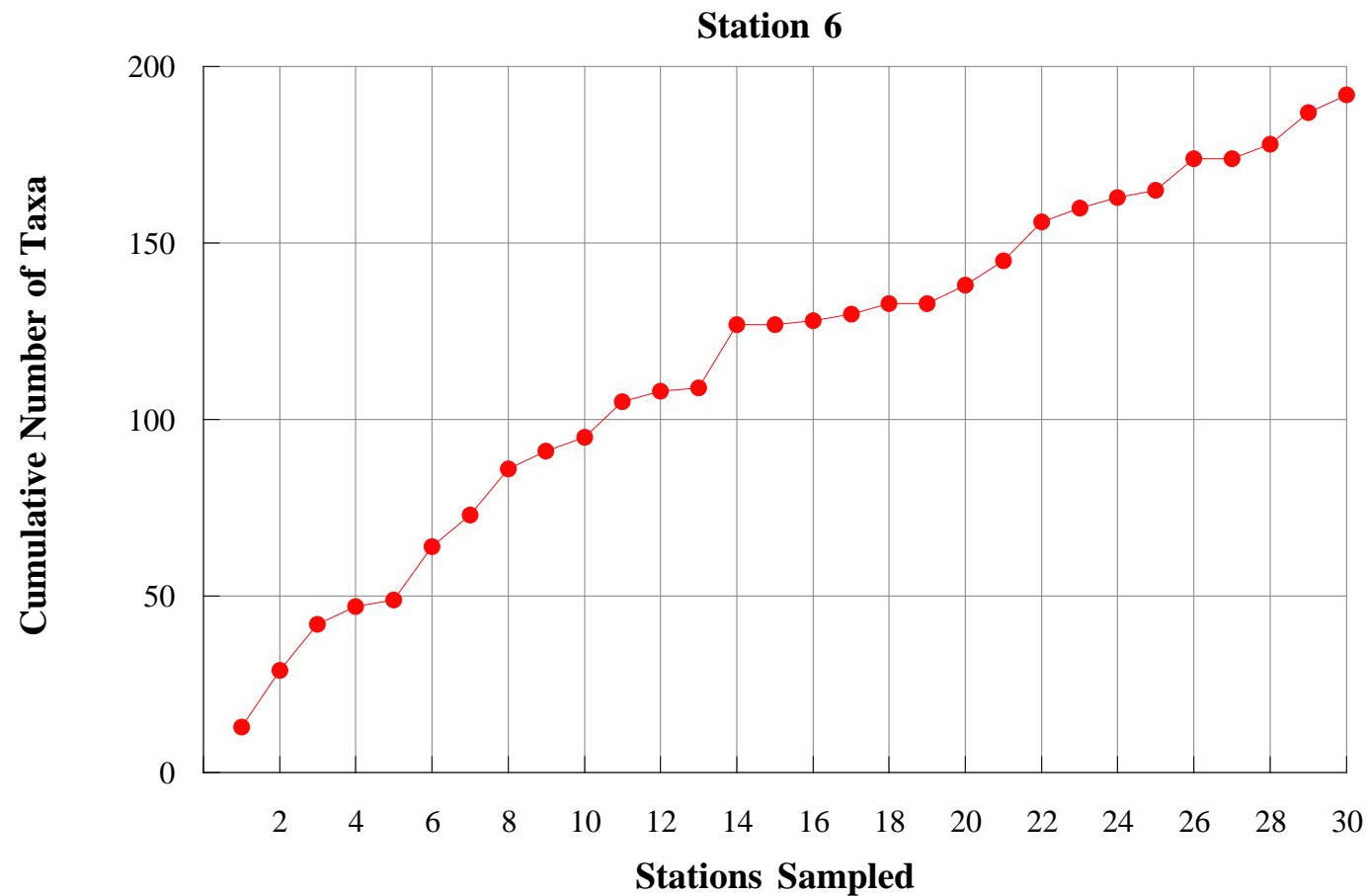


Figure 18. Comparisons of macroinvertebrate taxa richness for the Ft. Pierce, Florida ODMDS stations, 1992 and 1999.



APPENDIX I



Station 11

